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THE IMPACT OF SITUATION AND PERSONALITY ON FOUR HOPI EMERGENCE MYTHS

ESTHER S. GOLDFRANK

TWO ASPECTS of myths have been frequently emphasized: their resistance to change, as shown in stable patterning, and their ability to change, as shown in the loss, or incorporation, or manipulation of elements or motifs of different kinds. The individual's and the society's need for "canalization" may account for the former, while a changing historical situation, as well as the narrator's personality and own experience may account for the latter. Both aspects are treated with great insight by the late Dr William Morgan. In part, he concludes

> that a tale as "an actual entity" with its "historic route of occasions" comprises a family of processes which describe sense reception and perception when these processes include subjective forms and subjective aims in the individual who originates the story; thereafter, as the story is retold it becomes modified through processes which enable an intensification of relevance resulting in its persistence as a tale.[1]

Or as Kluckhohn puts this last:

> When . . . changed conditions happen to make a particular type of obsessive behavior or a special sort of phantasy generally congenial, the private ritual is then socialized by the group.[2]

A number of circumstances have made Hopi myths, and especially Hopi emergence myths, particularly responsive to "the historic route of occasions" and particularly expressive of those private rituals that depend more directly on personality and personal experience.

1 Morgan, 1945, p. 194.
2 Kluckhohn, 1942, p. 53.

At least fourteen versions have been recorded between 1883 and 1936.[3] Dr Parsons, when dealing with analogous material but definitely fewer variants from Zuñi, suggests that instability in tales of this kind is due to their secular character.[4] Fewkes takes the Hopi clan migration legends at face value.[5] Without going into the virtue or inadequacy of either argument, attention should be drawn to the peculiarly marginal nature of Hopi society within the pueblo complex. The Hopi water supply is notoriously fragmented and uncertain, and the Hopi government, since it has no large-scale tasks of water-control to execute, is less centralized and less autocratic than the governments of the more "hydraulic" villages of the Southwest. The numerous and differing versions of the Hopi emergence myth may well reflect the limitations of the Hopi theocracy, and as a corollary, the strength of the Hopi maternal clan.[6]

It is against this background that Hopi history and Hopi mythology must be seen. The internal tensions operative in Hopi society in general were high-lighted by the open split that occurred in 1906 in Oraibi, the economically least favored of the Hopi villages.[7] The cause of this disruptive action was said to have been the differing attitudes towards the Americans, the conflicting factions being currently known as "the Hostiles" and "the Friendlies." The presence of two opposing factions in Oraibi can, however, be inferred from historical data as early as 1700.[8] By 1741, the situation was clear. Escalante reports that in that year "God . . . allowed a grave discord over the election of a chief at Oraibe. On this account the pueblo was divided into two parties, who took arms against one another."[9] And probably, then as now, the receptiveness to alien influence (Spanish then, American now) merely served as a *casus belli,* as Titiev puts it.[10] Commenting on the recent split he writes:

> In reality there was a strong sociological aspect to the quarrel. . . . The Spider people regarded themselves as peers of the Bears because the two clans were "partners" in the same phratry, yet the highest office in the village was held only by the Bear clan and the Spiders were not eligible to be village chiefs.

3 These have been recorded by Cushing, Voth, Stephen, Parsons, Wallis, Scott (in Crane), Bunzel (in Parsons, 1926), Colton, Titiev (see Bibliography).

4 Parsons, 1923, p. 135.

5 Fewkes, 1900, p. 582.

6 Wittfogel and Goldfrank, 1943, p. 24. The term "hydraulic" has been suggested by K. A. Wittfogel (see *Oriental Society*) to designate societies that depend for productive or protective reasons, or both, on large-scale waterworks under government control.

7 Thompson and Joseph, 1947, p. 19.

8 Titiev, 1944, p. 71.

9 *Ibid.*

10 *Op. cit.,* p. 75.

And he adds:

> Then too the Spider people had a grievance in another respect. The Bear clan owned only one major ritual, the Soyal, but the Spiders controlled the Blue Flute and the Antelope ceremonies, besides helping with the Soyal and sharing in the control of the important Warrior society.

Most significantly, he concludes:

> Nevertheless, the Bears were owners of the entire Oraibi domain, while the Spider clan was allotted only a small piece of land in spite of its ceremonial importance.[11]

It is not surprising that the greatest tensions developed in the Hopi village in which the land question was the most crucial, and that it developed within so close a kin group as the phratry.[12]

Titiev has commented on the "speed with which recent events can be woven into Hopi mythology,"[13] and while this was apparent in most of the myths examined, only four of them had sufficient data on the narrator's personality and activities to warrant their use in a study of this sort. These four tales were collected by four different recorders—three anthropologists and an army officer. They were collected at different times between 1883 and 1932, and they were taken down from residents of one Hopi village, Oraibi, all of whom played a prominent part in the factional strife that rent the pueblo: a member of the Hostiles (possibly Lomahongyoma of the Spider clan and a leader of the opposition before 1901); Yokioma of the Kokop clan and a leader of the opposition after 1901; and Tawaqwaptiwa of the Bear clan and nephew of the long-time leader of the Friendlies, Lololoma, and his successor as Village Chief in 1901. Two versions were given by Yokioma, one before and one after the split.[14]

Certain themes having to do with "Spider Woman," "Elder and Younger Brother," "the Americans," and "Bear Clan Chief," have shown considerable susceptibility to reformulation and reinterpretation. In discussing the variations we have drawn upon a number of sources dealing with the historical scene or with the personality of the narrators. On the former, our information is comparatively full; on the latter, it is far from impressive. But it is hoped that together they will give further insight into the reasons for thematic change and, at the same time, a better understanding of Hopi society.

Myth A was given to F. H. Cushing in 1883 when he visited Oraibi to obtain

11 *Ibid.* See also Leupp, 1907, pp. 118, 121 ff.

12 Titiev, 1944, p. 75; also Parsons, 1922, p. 286.

13 Titiev, 1944, p. 71, n. 28.

14 For other instances of the same tale from the same informant see E. S. Goldfrank, 1926, *passim*, and E. C. Parsons, 1926, pp. 7, 169-175.

ceremonial objects for the National Museum.[15] The recording climaxed a vituperative interview between him and a man who said he was "chief priest of the tribe and a wizard," and who ordered him to desist.[16] The man in question is not further identified by Cushing, but it is possible that it was Lomahongyoma, the head man of the Spider clan,[17] who refused to recognize Lololoma, the head of the Bear clan (and Cushing's sponsor)[18] as Village Chief, the while claiming this honor for himself.[19] Whoever he may have been, it is certain that he belonged to the Hostile faction. After forcing his "opponents" to listen to his message, Cushing comments:

> They wished me to write down all they said and send it back to Washington; then to leave at once, for my presence "oppressed them as things which caused the stomach to vomit."[20]

He continues:

> I hastily ran home, and, getting paper, rolled a pistol in my blanket and returned.[21]

And he adds:

> As soon as I had sat down by the fire, they gave me in substance their myth of creation, which for the sake of clearness I have given rather as a myth than as an infuriated argument, interspersed with the most insulting messages to Washington. . . .[22]

An abstract of this myth follows:

MYTH A[23]

Four lightless worlds. Lowest cave world overcrowded. Two boys, Older Brother and Younger Brother, pierce roofs of cave worlds and descend. Try out all plants as ladder for people to ascend. Climb up to second world by cane. Pull up cane ladder, leaving others below. "Our brothers to the westward" ascend later.

Second cave world overcrowded. Ascent to third world. Fire and torchlight from "the Two." Women crazy to dance, neglect offspring.

Ascent to fourth world which is dark and surrounded by waters. See tracks of Corpse Demon (Masau). With men are Spider, Vulture, Swallow, Coyote, Locust. Spider spins cotton mantle to give light. Deerskin shield sent to east to become sun. Cotton mantle sent to west to become moon. Coyote opens heavy jar, stars fly out. Vulture fans away the waters. "The Two" cut water channels to drain the land. Prints left as land hardens into stone.

Daughter of Chief-priest killed by jealous girl with aid of Corpse Demon. Detection through ball of meal and pollen. Chief sees daughter living in underworld. Murderer of girl spared. Her descendants are witches: warning to Americans.

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15 Cushing, 1922, p. 259.
16 *Idem*, p. 260.
17 Titiev, 1944, p. 73.
18 Cushing, 1922, p. 259.
19 Titiev, 1944, p. 79.
20 Cushing, 1922, p. 263.
21 *Ibid.*
22 *Idem*, p. 263, ff.
23 Cushing, 1923, pp. 163-171.

Locust killed. Revives, turning black. Taken as medicine for wounds. Swallow sent back for seed corn by God of Dew, who gives seed to Corn people. Children of witch girl cause troubles. People on way war with people of an earlier emergence and with one another. Navaho enemy of all. Mexican made of clay and breathed upon. Of bad color, he is washed off and the horse and burro created from this washed-off epidermis and flesh. Become enemy because he tried to wash [baptize] everyone.

American came out of cave worlds first. Elder Brother leaves to journey to the land of the sun. Prediction: Older Brother (the Americans) shall return to Younger Brother (the Oraibis). Older Brother rich, Younger Brother poor. Rejection of Older Brother by Younger Brother. Older Brother will behead Younger Brother. He will sit upon head as upon a stool-rock. Knife that severs head of Younger Brother will divide the trail of Older Brother's life.

Myths B and C were given by the same informant, Yokioma, a member of the Kokop clan,[24] which together with the Spider clan owned the paraphernalia of the Momtcit or general Warrior society.[25]

The former was taken down by Voth, either in 1903 or 1904—that is, just prior to the split, the latter by Col. Hugh L. Scott sometime around 1911—that is, five years after the split and when Yokioma was head chief of Hotevilla, one of the villages settled by the Hostiles after their expulsion from Oraibi.[26] Myth C lacks the literary form and fullness of the earlier recording, reflecting, perhaps, the different scientific standards of the military man and the anthropologist, or, since it took more than a week to write down, Crane's need to condense for the published version.

Just when Yokioma became the leader of the Hostiles is not quite certain. Many recent informants, according to Titiev, think of him in this position from the first, since he led his fellow-agitators from Oraibi in 1906.[27] However, in 1901, Voth and Dorsey speak only of Lomahongyoma's leadership.[28] Whatever the fact, it seems reasonable to assume that Yokioma was an active participant on the Hostile side sometime before the 1906 break.

Abstracts of his two versions follow:

Myth B[29]

A long time ago everything was good below. It rained all the time. Then chiefs commenced to be bad. It stopped raining; crops were poor; people became sick and quarrelled. "The people began to live the way we are living now, in constant contentions."

Chiefs plan to take revenge on the people. Think of escaping. Kik-mongwi hears

24 Titiev, 1944, p. 75.
25 *Idem*, p. 78, n. 59; pp. 83, 156.
26 *Idem*, p. 86 ff.
27 *Idem*, p. 75, n. 64.
28 Voth, 1901, p. 9.
29 Voth, 1905, pp. 16-26.

sounds above. Makes Pawáokaya (species of bird) and plants a pine tree. Pawáokaya flies out of opening but cannot find anyone. Another bird (humming bird) goes to upper world but can find no one. Another bird (hawk) flies through opening but can find no one. A fourth bird, Motsni, finds Skeleton at Oraibi, who invites people to share his poor life.

White Man, the Paiute, the Pueblo, etc., in lower world. Some with not too bad hearts assemble with chiefs. Plan to leave secretly in four days. They climb reed, "first the different chiefs, the Village Chief . . . who was also at the same time the Soyál-mongwi, the Flute chief . . . Horn chief . . . Agave chief . . . Maráu chief . . . Lagón chief . . . and the Warrior chief (Kalehtakmongwi or Pöokong) and then the people . . ." Powaktu [witches] come out before reed is pulled up.

Small son of chief dies. Ball of fine meal detects witch, who is spared when chief sees his son alive in underworld.

Spider Woman assists the Flute priest create moon and sun. Chiefs then make different blossoms and plants. Mocking bird gives different languages to people. At common meal, all struggle to get largest [corn] ears. Small ones left to Hopi. Elder brother of chief selects best food. Elder brother goes toward sunrise. When reaching there he should touch sun and live there. Brethren not to be forgotten. "They agreed that if the Hopi should get into trouble again, and live again the same way as they did in the lower world, the elder brother should come back to them and discover the Powakas who caused the trouble, and cut off their heads."

Elder brother and his party start first. Become the White Men as they travel eastward. Then the chief and his party, then the maiden who had been found to be a Powaka. White men more skillful than others. "Spider Woman who was with them, made horses and burros for them . . ." The party that brought Powak-mana with them settles down at Palatkwapi where they live for some time without a clan name.

Other parties stop from time to time when they find good fields and springs. Before reaching the place where Hopi now live they begin to become bad. War against each other. Some arrive at Muenkapi—the Bear clan, Spider clan, Hide-Strap clan, Blue-bird clan, and Fat-Cavity clan, "all of which derived their names from a dead bear upon which these different parties had come as they were traveling along."

Another party goes to Little Colorado River, and arrives at Shongopavi. These people are also Bear clan.

Skeleton living where Oraibi is now. Bear clan, Hide-Strap clan and Blue-bird clan move to Oraibi. When Spider clan arrives at Muenkapi, it marks bluff to show where Hopi should plant.

After Spider clan moves towards Oraibi, Snake clan arrives. Also writes on bluff. Then Burrowing-Owl clan. All travel to Oraibi where Skeleton lives.

Skeleton comes to meet Bear clan at Nátuwanpika (about a mile northwest of Oraibi). They ask Skeleton to be their chief and give them land. Skeleton refuses. Says Hon-wungwa (Bear clan chief) should be chief, as he was in the underworld. Only when White Man, "your elder brother," comes back here and cuts off the heads of the bad ones will Skeleton own the land again, but "until then you shall be

chief. I shall give you a piece of land and then you live here." Skeleton then marks off a piece of land which he allots to the Bear clan.

Bear clan brings Soyál cult, the Aototo, and the Soyál Katcinas. Other clans arrive, asking village chief for permission to settle in the village. Bring their cults and are given permission to remain—first, the Hide-Strap clan, the Blue-bird clan, the Spider clan, etc., "and that way their fields were all distributed."

Bow clan one of first to arrive. Bow clan chief produces rain. Holds Wuwuchim ceremony of which he is leader. Then the Soyál ceremony in charge of the village chief is held; then the Snake and Flute ceremonies. Snake cult brought by Snake clan, Antelope cult by Blue-bird clan, Flute cult by Spider clan. Lizard clan brings Maráu cult and Parrot clan, the Lagón cult.

Everything still good at that time. When Katcinas danced, it rained. Popwaktu increase. One Powaka maiden teaches others her arts. Finally Palatkwapi is destroyed by great water produced by Palolõokonga. A few people saved.

These come to Walpi and then scatter to other villages, teaching people their evil arts. Give sickness; turn Ute Indians and Apaches into enemies; also the Navaho, then the White Men. These White Men also called by the Popwaktu.

But Hopi still look towards their elder brother, the one who arrived first at sunrise—"Our old men and ancestors have said that some White Men would be coming to them, but they would not be the White Men like our elder brother, and they would be worrying us. They would ask for our children. They would ask us to have our heads washed [baptized], and if we would not do what they asked us they would beat us and trouble us and probably kill us. . . . But we should not listen to them, we should continue to live like the Hopi. . . . But those Popwaktu of the Hopi would help the White Men, and they would speak for the White Men, because they would also want to do just the same as those White Men would ask them to do."

Myth C[30]

Hopi come from Underworld, where they had chiefs and medicine men, and villages were the same as now and here. People drifted away from traditions. Even wives of the priests became evil.

Good chiefs and medicine men hold council. Decide to leave for another world. First plant pine trees. These touch roof of sky but cannot pierce it. Next plant sharp-pointed reed. These pierce sky.

Birds sent out as messengers to find a land for the good people. Humming bird tries first; falls back into underworld exhausted. Then chicken hawk. It also becomes exhausted. Then swallow, but it does not reach top of reeds. Finally cat-bird is sent. He flies through hole in sky and comes to Oraibi, where he finds Red-headed Spirit.

Bird asks Ghost to permit people of the Underworld to come to Oraibi to live. Spirit consents and bird returns. People still busy with social dances, but chiefs, medicine men, and good people begin to climb reeds when they hear news. Helped by two Gods of Hard Substances who make reeds firm. Frivolous ones shaken off reed and hole in sky stopped up.

Head chief's daughter dies. Cornmeal medicine indicates witch and murderess.

30 Crane, 1926, pp. 163-167.

Chief prepares to throw her into Underworld, but spares her life when he sees his daughter playing there. Witch promises to help chief and says that some day his daughter will return.

Dark when Hopi arrive on earth. Cut round piece of buckskin and put bits of hearts of birds, beasts, and all the people on it. Buckskin not powerful enough to give light. Bits of hearts placed on white cotton cloth which is set in the east for the sun. The sun then gives light.

Head chief asks mocking bird to give each group a language. Older brother's people receive the first language, which is that of the White Men.

Clans disperse. Older brother of chief and his people directed to go to sunrise and stay there. Will be sent for in time of trouble. Chief tells him not to be baptized into any strange fraternity.

Clans go their several ways, stopping from time to time to raise corn crop. Sometimes stay two or three years. Older brother travels fast to the east and has not yet returned.

Ghost clan arrives at Moencopi. Smoke and Spider clans arrive there too. Bear clan reaches Chimopovi. Two brothers, chiefs of this division: one settles at Oraibi where the Ghost and other clans later join them.

Two groups within Ghost clan: Ghost clan proper and Ghost-and-Bird clan. Known as bravery clan and act as guards. Bear clan and Ghost clan try to win war with Ute, Navajo, and Apache without aid of Ghost-and-Bird clan. Cannot, and ask their aid. Put explosive in pottery; throw bombs at enemy and scatter them. Then Ghost-and-Bird clan live at Oraibi and are taken into sacred fraternities. Are known as warriors.

Traditions say that a stronger people will come upon the Hopi and the Bear clan will yield.

Many years ago Spaniards come from the south and seek to make Hopi accept their ways. Remain four years and the Bear clan yields. Spider clan yields, but not Ghost-and-Bird clan.

Then black-robes come to Oraibi, and after four years they want to baptize Hopi. Ghost-and-Bird clan unwilling to assist larger clans like Bear and Spider who yielded to Spaniards. Ghost-and-Bird clan know that the sea will swallow up the land if they accepted new teachings. Badger clan kills the Spanish black-robes.

Great battle takes place, the Oraibi people on one side, the Spanish, aided by First and Second Mesa Hopi and the Navajo, on the other. People of Oraibi recognize Ghost-and-Bird clan as their bravest men. Live in peace for many years.

Next come the white men: they bring school. Some Oraibi people yield and take on ways taught by white men of the Government. Ghost-and-Bird clan does not yield.

Then come soldiers of the white men. Youkeoma, a prisoner eight times, but does not yield. Five years ago, because of these troubles, Ghost-and-Bird clan left Oraibi and settled at Hotevilla. Youkeoma looks on Oraibians as traitors, for they received strangers and yielded to strange teachings.

In the end all enemies will combine against Ghost-and-Bird clan. So say the traditions. Youkeoma cannot change it nor can he go contrary to the traditions. The

talk of white men is incited by witches, and Youkeoma knows that these white men are not the true Bohanna who will come some day and who will know the Hopi language.

The way for the white men to conquer the Hopi is to cut off Youkeoma's head. The traditions say that the head of one of the Oraibi chiefs will be cut off, and then the trouble will cease. But Youkeoma cannot yield, for then the sea would swallow up the land and all would perish.

Myth D was recorded by Titiev in 1932 from Tawaqwaptiwa, Lololoma's sister's son. This nephew of the head of the Bear clan, leader of the Friendlies and Village Chief since before Cushing's time, became his uncle's successor;[31] and when Titiev visited "Old" Oraibi, he was still the head of the "Friendly" rump in that village. The abstract given below is a condensation of what was purported to be "Lololoma's version."[32]

MYTH D[33]

So much trouble made in Underworld by Spider and Bow clans, which were "partners" in mischief-making, that Matcito, the Bear clan chief, orders an Emergence. Plans to lead only his good followers to the surface of the earth. Some bad people (witches) also climb out. Daughter of Bear Chief dies. Was killed by Spider Woman, ancestress *(wuya)* of the Spider clan. Matcito spares Spider Woman when she shows him his daughter has happily returned to Underworld.

After journeying some time, Matcito draws line on ground running east with two forked branches, one pointing north, the other south. Matcito takes path to south. Tells Spider Woman to go north. Matcito says he has "no power to feed my people or to bring rain." He only has the Watchmen Brothers [Little War Twins], the Katcinas, and the Soyál ceremony. Believes more people will follow Spider Woman who can bring rain, make crops grow, and protect people from sickness.

A few went with Matcito; most went with Spider Woman, who had Blue Flute ceremony which is supposed to bring warm sun for crops. Spider Woman says she will go north to Kawestima where it is always cold. They will meet again: "Whenever we meet I will draw your people away from you and you will have no followers—you will be worthless."

A White Man, Bahana, of exceptional qualities, who looks upon Hopi as younger brothers, emerges with them. When Spider Woman finishes speaking, Bahana says he will leave Matcito and travel east. He will turn to watch Matcito and help him if he has any trouble with Spider Woman. Tells Matcito to turn to east. Says, "We came from the same home—we are not friends but brothers. If Spider Woman makes trouble I shall return and cut off her head."

Bahana departs for east. Matcito starts south and Spider Woman north. Matcito settles at Oraibi, Spider Woman at Kawestima. In first year her crops are good; in

31 Titiev, 1944, p. 73, n. 48.
32 *Idem*, p. 73.
33 *Idem*, pp. 73-74.

second year they begin to fail; in the third and fourth years she has no harvest at all. Spider Woman admits failure and advises her followers to rejoin Matcito. Reach Oraibi and ask to be admitted. Spider clan leader promises to make a kiva for Matcito and help with Soyál. Will distribute prayer sticks Matcito makes and fetch things needed in Matcito's ceremonies. Will collect corn to be "blessed" and carry offerings to Lehu spring. Also offers to sing during the Soyál, perform his Blue Flute ceremony, and hold winter observances in his kiva. Despite his fair words he still had in his heart the idea of stirring up future trouble which he had received from Spider Woman. Matcito knows this, but he nevertheless allows Spider leader and his clan to settle at Oraibi.

What can be said of the personality of the men from whom the above myths were recorded? The actual words of the "chief priest of the tribe and a wizard" as reported by Cushing should be illuminating. Descriptions of Indian councils, both formal and informal, almost invariably stress their dignity and judicial character, the patient waiting for a turn to speak. Certainly Cushing's efforts to buy ceremonial objects falls within a somewhat different category, but the "ideally" desirable behavior—so often confused with "real" behavior—finds little support either in the Hostile leader's actions toward the opposition or in his argument with Cushing.[34]

Shortly after Cushing's appearance in the kiva, a group of Hostiles, assembled by herald,[35] "intercepted the highest priest-chief and his associates compelling them to return to their houses; then entered and took possession of the estufa."[36] Unwillingly they listened to the "child of Washington"; but, writes Cushing:

> Before I had finished the last sentence, I was angrily interrupted by three or four voices from the opposite side of the ladder, refusing my offer and insulting me in language not to be reproduced.[37]

That Cushing was not being excessively sensitive or prudish can be seen from remarks made by his "opponents" shortly afterwards which he does report:

> They said to me, "You are a heap of dung in our plazas; you stink of your race. Leave or we will throw you off the mesas, as we throw dung out of the plazas."[38]

These are not measured words by any standard, and Cushing felt they might

34 For another example, see the conversation between Lomahongyoma and Lololoma in Titiev, 1944, p. 79, text and n. 104.

35 Cushing, 1922, p. 260.

36 *Ibid.*

37 *Idem*, p. 262.

38 *Idem*, p. 263.

even be a prelude to more aggressive action, for only after exhibiting his pistol did he move toward the ladder to leave.[39]

Regarding the two other leaders, Titiev has this to say:

It is the opinion of some of the old Hopi that Tawaqwaptiwa was chosen in preference to his older brothers because he was young and impetuous, and Lololoma evidently hoped that he would be energetic enough to bring matters to a head and so end the incessant bickering at Oraibi. Tawaqwaptiwa became Village chief in 1901 or 1902; and coincidentally, Lomahongyoma began to take a less active part in the direction of Hostile affairs, while Yokioma (Kokop) came forward as head of the Conservatives. Yokioma's policy was one of vigorous opposition to the introduction of American ideas, and he insisted that the Kokop clan would never submit to "the new ways taught by these white men of the Government."[40]

Leo Crane, agent on the Hopi Reserve from 1911 to 1919, has this to say of Tawaqwaptiwa, the leader of the "Friendlies":

As his Indian Agent, I tried for eight long years to make a sensible human being of him and failed, for lack of material. After having tried him as an Indian judge, and then as an Indian policeman, in the hope of preserving his dignity and authority as hereditary chief, he was found to be the most negatively contentious savage and unreconstructed rebel remaining in the Oraibi community, so filled with malicious mischief-making to his benefit that a group of his own people petitioned me to exile him from the mesa settlement, in the hope that they might then exist in peace.[41]

Of the leader of the Hostiles he writes:

Youkeoma, a different type of Hopi, had been defeated by the Tewaqwaptewa faction, and was now in the medicine-man and prophecy business about seven miles to the west, in his new and already odorous town of Hotevilla, whence, after the tribal troubles, like another Moses he had led his faithful. Tradition has it that there will always be jealousy and enmity among the Oraibans until the pretender to leadership is martyred; so when Youkeoma was thrown out, he accepted it as a manifestation of the rules.[42]

Somewhat more concrete is his description of Yokioma arriving for an interview with Colonel Scott after he had spent ten days giving him Myth C:

Youkeoma wrathfully came into the council room. His anger was like that of a trapped animal; his eyes gleamed with hatred, and he fairly quivered with rage.[43]

Crane's evaluations obviously reflect the worries of the administrator. But the versions of the emergence myths given by these two leaders seem in general to

39 *Idem*, p. 267.
40 Titiev, 1944, p. 83.
41 Crane, 1926, p. 86 ff.
42 *Idem*, p. 87.
43 *Idem*, p. 170.

bear him out. Certainly, Tawaqwaptiwa was less reserved in his accusations, even a quarter of a century after the split. Already in the Underworld he makes the Spider clan (Lomahongyoma's clan and the spearhead of the Hostile faction) and the Bow clan (closely allied to Kokop, Yokioma's clan) "partners in mischief-making;" and he has no hesitation in pinning the murder of Bear Chief's daughter—a child of his clan—directly on Spider Woman, the ancestress of the Spider people. Other Hopi emergence tales, not only those of the Hostile leaders, invariably lay this evil show of power at the door of some unnamed witch; and Spider Woman, if she is mentioned at all, is revealed as a helpful intermediary in the creation process and later. Tawaqwaptiwa himself, apparently still responsive to traditional belief in this regard, also mentions Spider Woman's good powers, but he is quick to point out her failure to operate successfully outside the Oraibi domain and without the leadership of the Bear people.

Yokioma, who, as Crane reports, was in the "medicine-man and prophecy business," shows a stricter adherence to old forms, at least in the earlier of his two versions. This is most striking in his treatment of the rights of the Bear clan and Bear clan chief. That he reported the good offices of Spider Woman should cause no surprise—the Spider people were his close allies both in ceremonial activity and factional strife. And while he comments that chiefs in the Underworld "commenced to be bad," he does not point his finger at anyone particularly. Moreover, he makes explicit, first, in the order of ascent, and later, in the order of arrival at Muenkapi and Oraibi, that the Bear people are the leaders, and that Hon-wunga, the Bear clan chief, controls the Oraibi domain. Obviously, he does not question the right of the Bear clan in this matter as did his predecessor Lomahongyoma who said to Lololoma, the then Village Chief, "I own all these fields not you. . . . That is why I ought to stand at the head of the people instead of you."[44] And by way of supporting the hypothetical identification advanced above, it is of interest that the Hostile and anonymous narrator of the tale recorded by Cushing (Myth A) carefully avoided any mention of Bear clan leadership and of the rights of this clan to the Oraibi domain. In fact, the Bear people are never mentioned. The teller merely notes that among those making the ascent from the lower world are Spider, Vulture, Swallow, Coyote, and Locust, all of whom and in that order play a useful part in the creation process.

Yokioma's second version, C, given in 1911, five years after the split and when he was well-established in his position as Village Chief in the newly-

44 Titiev, 1944, p. 79, text and n. 104.

settled Hotevilla, exhibits an overwhelming concern with legitimatizing his access to power. In this second version, it is the "people" and the "wives of the priests," and not the "chiefs," who are bad in the Underworld. He now omits any reference to the order of ascent (in his earlier version, he mentioned first, and as the Village Chief, the Soyal-mongwi, always a member of the Bear clan), and he also significantly omits any reference to the rights of the Bear clan to own and control the Oraibi domain, although he notes that it arrived there first. Equally revealing is the off-hand and disparaging way in which he deals with the Spider clan (the earlier and long-time leaders of the opposition), and the importance he now attaches to the brave actions of the unyielding Ghost-and-Bird clan, presumably his own.[45]

The treatment of the "Older and Younger Brother" theme also reveals noteworthy differences, but while there is a tendency for the opposition to reject an identification of the "Old Brother" and the Americans, this is not always the case. The "Brother" theme can be documented over a wide area, and often, and even in Hopi, it is linked with that of the War Twins. In Myth A this seems to be so, at least at first, although at the close of this tale, Older Brother becomes the rich and hostile American, Younger Brother the poor and victimized Hopi.[46]

In Yokioma's first version, B, the Elder Brother and Younger Brother theme is not connected with the War Twins. Elder Brother is, however, identified with "White Man" who comes up from the lower world along with the rest of humanity. Greedy and more skillful than the others, he still remains the ally of Spider Woman. The "white men" who "ask us to have our heads washed" (baptized) are different. They have been influenced by Hopi witches, obviously, if not so designated, the members of the "Friendly" faction.

In Yokioma's second version, C, Older Brother is again identified with "White Man," and again the "true" Bahana are differentiated from those "white men" who brought the school and who may some day conquer the Hopi.

In Myth D, Tawaqwaptiwa's version and the only "Friendly" one presented here, the War Twins are mentioned, but not as Older and Younger Brother.

45 Titiev writes: "The word Kokop has been variously translated as Firewood, Cedarwood, Charcoal, etc. All of these are incorrect, and it is far better to leave the word untranslated" (Titiev, 1944, p. 75, n. 61). While the original word is not given in Crane, 1926, Ghost-and-Bird is probably another translation of Kokop, or the name of a Kokop sub-group.

46 In view of the treatment accorded these two themes in Myth A, Titiev's statement (1944, p. 74 ff.) regarding the Hostiles' unwillingness to equate the Americans with the "true" Bahana, or Older Brother, or White Man, as he is variously referred to, requires some qualification.

Instead, Bahana, White Man, is equated with Older Brother. He travels east, but will return to help Matcito (the Bear clan chief who led the Hopi from the Underworld), whenever the latter is threatened by Spider Woman. While there is no explicit identification here of Older Brother with the Americans, the role assigned him would fit the "Friendlies" expectation (and realization) of United States help.

Two problems of a very different kind should also be mentioned because of the light they throw on Hopi personality and society: (1) the frequent recourse to violent phrasing in the myths cited, and the low incidence of serious physical harm in the actual conflict, and (2) the different quality of fatalism as expressed in the myths by members of the different factions.

Hopi literature stresses, and I believe rightly so, the emphasis placed on harmony and peace by Hopi society. The need for coöperation even in so limited an irrigation situation as exists in this peripheral complex has been commented on elsewhere,[47] but the particularly fragmented nature of Hopi society has made the achievement of its social ideal difficult in the extreme. Town-splitting, as Dr Parsons and others have pointed out, has characterized Pueblo Indian life for centuries.[48] The numerous archaeological ruins in the Southwest cannot be explained by any fundamental climatic or ecological change, but the limited economic potential of all Pueblo villages makes them unusually vulnerable to any fluctuation in rainfall or temperature, and the not infrequent droughts place an added strain on these already far from secure communities.[49] In the past schism may well have been the final answer to internal and no-longer bearable tensions, and the surest way to restore a workable order.

The Hopi split seems to have been such an answer. 1903 and 1904 were years of drought,[50] and it was just in this last that the Chimopovy immigrants were "invited" by the Hostiles and given Bear clan land over the understandable protests of members of that group.[51] Yet the incidence of violence at this time

47 Wittfogel and Goldfrank, 1943, p. 20; also Goldfrank, 1945, p. 519, text and note 12.

48 Parsons, 1922, p. 283; also statement of J. Walter Fewkes on the same page.

49 Dr Ruth Bunzel tells me that at Zuñi there was much more talk of witchcraft after the drought years of the 'thirties than in the prosperous and not so dry late 'twenties.

50 Leupp, 1906, p. 159.

51 Titiev, 1944, p. 83 ff. Thompson and Joseph (1947, p. 19) write: "The Third Mesa people (including those of Oraibi) have considerably less farm and range land than those of First Mesa in relation to the size of the population. In the farming and grazing economy the Oraibians are under greater pressure than are the First Mesa people. . . ." Though so well aware of Oraibi's unfavorable situation, the authors fail to draw the obvious inferences from these facts, and by a sentence sequence below seem to suggest instead a direct relation between the establishment of a Mennonite mission and the Oraibi split in 1906. They write: "In 1903,

as well as in the just preceding decades, was apparently low. Was this due to peaceful Hopi attitudes, to pressures from the outside, or to both?

Certainly there is little in the words hurled at Cushing to indicate an extreme unwillingness to act violently; nor does the fact that the Hostiles imprisoned the Friendlies' leader, Lololoma, in the kiva—"to starve," so he believed, "if the representatives of the government had not rescued him,"[52] disclose an opposite attitude; nor, indeed, does Mr Keams' report that on his way to the pueblo nine years later, he and some soldiers "met a courier . . . who informed us that the bad Oraibis had threatened to kill Lo-lo-la-my";[53] nor does Tawaqwaptiwa's assertion that the Hostiles who threw meal at the sun to "kill it," were "really praying to the sun for power to kill Lololoma."[54]

Throughout his discussion, Titiev has stressed Lololoma's tendency to remain aloof, to avoid physical contact. In so doing, he was obviously conforming, as village head, to the ideal pattern of chiefly behavior—a pattern, however, that operated not only in the "peaceful" Pueblos but also in the "warlike" Plains, where it was frequently honored in the breach. That such an eventuality was not outside the range of possibility for the Hopi may be gathered from the epithet, "coward," which was leveled at Tawaqwaptiwa by his own supporters for not actively entering the fray,[55] or from Yokioma's part in the tug of war to decide whether the Hostiles were to go or stay—[56] and this, at a time when Yokioma was already "usurping the chief's function,"[57] and could therefore be expected to act like a legitimate village chief. That chiefs were believed capable of wreaking their vengeance on their own people is clear from Myth B as well as from statements by Nequatewa;[58] but whether this involved active violence on their part or only on the part of others cannot be definitely stated.

That physical violence was by no means outside Hopi ideology and practice can be easily documented from the ordinary and the ceremonial life of the tribe.

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however, a Mennonite Missionary took up residence on a mesa near the ancient pueblo. Soon a feud, which had been developing for some time at Oraibi, crystallized and split the ancient pueblo. . . ." "Some time" is a strange verbalization for an in-group feud that can be documented as early as 1740 and, if it is permissible to judge from the emergence myths, probably got started long before that year. Moreover, a Baptist mission established below First Mesa in 1894 had no comparable deleterious effect. First Mesa remained intact and "kept Hopi values" *(ibid.)*.

52 Cushing, 1922, p. 267; see also Titiev, 1944, pp. 76, 78, n. 90.
53 Titiev, 1944, p. 77.
54 *Idem*, p. 79.
55 Nequatewa, 1936, p. 66.
56 Titiev, 1944, p. 86.
57 Nequatewa, 1936, p. 63.
58 *Op. cit.*, pp. 109 ff., n. 4.

Speaking of their political organization, Titiev notes, "To the War Chief was given the duty of maintaining discipline. . . . He had the right of scolding miscreants, of boxing ears, and, perhaps of thrashing them."[59] Moreover, "several Katcina impersonations of a disciplinary or punitive character" assisted him in carrying out his task.[60] In addition, whipping—and its punitive intent can be readily established—was an important feature of the Hopi child's first initiation ceremony.[61] However "amorphous"[62] the Hopi state may seem today, it is more than certain (and here even Titiev seems to concur) that in an earlier time, its legislative functions as well as its powers to implement them were more pronounced. In 1776, some two hundred years after the Spaniards first entered the Southwest, Escalante wrote Murillo:

> The reduction of that rebellious province [Tusayan] has become more difficult because the principal men . . . promulgated by common agreement formidable penalties . . . against those who . . . were proved to have been talking . . . with the fathers in matters of religion.[63]

We can only guess at what these "formidable penalties" actually were. Perhaps whipping, perhaps something worse. Certainly, beheading is the sanction most often referred to in the emergence myths cited. Early petroglyphs in neighboring areas testify to its pre-Columbian occurrence;[64] and one, significantly, shows a member of what seems to be a returning war party holding a head, while others are leading captive women "who are depicted as wearing their hair in whorls in Hopi virgin style."[65] Moreover, after the battle between the Navaho and the Hopi, instigated, according to Nequatewa, by Hopi who wished to "sacrifice"[66] themselves, Hopi skulls were left to grace the scene.[67] In Myth A, it is the Americans who, by implication, will behead the Hopi chieftain, and in Myth C, the white men's victory, it is suggested, will follow the fall of an Oraibi

59 Titiev, 1944, pp. 65 ff.

60 *Idem*, pp. 66, 78 ff.

61 Steward, 1931, pp. 64 ff.; Simmons, 1942, pp. 79-87; Voth, 1901, pp. 103 ff. For a general discussion, see Goldfrank, 1945, p. 527 ff.

62 See Titiev, 1944, Chapter 5: "The Amorphous Hopi State."

63 Titiev, 1944, pp. 66 ff., text and n. 55.

64 Reagan, 1931, p. 190, fig. 5, p. 212; also Reagan, 1933, pp. 6 ff. and figs. 2 and 4. For a summary on *Petroglyphs in the United States*, see Steward, 1937.

65 Reagan, 1933, p. 7, fig. 2. Steward (1937, p. 422) notes that the figures "are reminiscent of the Kachinas or masked god-impersonators of the modern Pueblo Indians, and that some sort of symbolism seems to occur in the headgear strongly suggest a religious purpose." In a recent conversation Dr Steward commented that he now believed that the glyphs with severed heads depicted actual behavior in war.

66 Nequatewa, 1936, p. 107, Editor's n. 32.

67 *Idem*, p. 33, 107 ff., n. 33.

chieftain's head. In each of these instances, legendary, pictorial, and historical, a Hopi is the real or potential victim and the aggressor is an external enemy.

But according to the myths, the Hopi may also serve their own people in this way. In Myth B, Elder Brother (here definitely a Hopi) "should come back to them and discover the Powakas [witches], who caused the trouble, and cut off their heads"; and the same theme is repeated later in the tale. The narrator himself finally makes the identification clear by speaking of "those Popwaktu of the Hopis." In Myth C, the witches who will help the white men (not the "true" Bahana) to conquer the Hopi (an action that can be accomplished by cutting off the head of an Oraibi chief) are obviously Hopi. And in Myth D Spider Woman, here named as the witch who caused the death of the Bear chief's daughter, is immediately linked to the Spider clan people, that is, to Hopi people. Again, White Man, or Bahana, says, "If Spider Woman makes trouble I shall return and cut off her head."

It may be argued that "witches" and "traitors" (see Myth C) are "enemies." This is certainly true, but, according to Titiev, "the Hopi pattern of witchcraft beliefs includes the tenet that all witches must be related to their victims,"[68] and "traitors," as used here, is merely a synonym for "opposition"—an institutional feature that is obviously incompatible with Hopi ideas of good government. Whatever the final equation may be, it is eminently clear that the large majority of the witches referred to in the tales are of Hopi origin. The "traitors" are so by definition.

No concrete evidence, as far as I know, can be adduced to document actual beheading within the Hopi in-group. But the dramatic "play" described by Stephen,[69] that was so realistic that Hopi children cried out in horror when they thought the Kachinas were about to sever a relative's head as it hung over the kiva parapet, as well as the visitations of the Giant Kachinas to the homes of the not-too-good boys and girls whom they threatened with their frightening weapons —a large knife or saw among them[70]—certainly indicate the significant role played by this punitive sanction in Hopi ideology and socialization. Under the circumstances, it is not surprising that, as Dr Parsons has stated, "beheading is a recurrent conclusion in Hopi tales. . . ."[71]

Obviously is it not difficult to document Hopi violence, real, intended, or

68 Titiev, 1944, p. 26; see also Titiev, 1943, pp. 550, 554.

69 Stephen, 1936, p. 243.

70 Titiev, 1944, p. 220. For pictures of these kachinas see Kennard, 1938, Plates 7-11 drawn by Edwin Earle.

71 Cushing, 1923, p. 170, Editor's n. 1.

symbolic, but its manifestations, at least in the last decades before the split, and as far as the records go, never seem to have reached the stage of actual killing. Threats of murder were by no means infrequent, and the man who did not shoot was certainly no hero in Hopi eyes.[72] Yet, as Titiev has pointed out, the pacific emphasis was so strong that Tawaqwaptiwa, the leader of the Friendlies, reported a leader of the Hostiles to have said at a meeting just prior to the split: "Our plan is not to hurt anyone. . . . If some one from their side goes crazy and kills a person it's their fault, but we don't mean to kill anyone." Nevertheless, he concludes: "But let us take our weapons so that we can defend ourselves if necessary."[73]

If, "in reporting the words of his worst enemies, Tawaqwaptiwa admitted that they were trying as hard as his own side to avoid shedding blood,"[74] the Friendly chief also underlined Hopi feelings of mistrust and Hopi convictions that in-group killing was more than a possibility. That the United States government played no small part in keeping the incidence of serious violence low may be inferred from Commissioner Leupp's report that both sides were armed and ready to use their weapons in 1906 until warned against so doing by Government employees.[75]

It has been claimed that Oraibi is atypical of Hopi,[76] and, by implication, of Pueblo society in general. The exact opposite view has also been put forth.[77] Here it is only necessary to point out that features which have been highly disruptive in Oraibi are also present in other Hopi villages, and that features which have made for cohesion on other mesas, have also been present in Oraibi. But no other Hopi village was torn by such long and intense strife—and no other Hopi village was faced with quite so vulnerable an economic situation. Although a willingness to join the strife is not lacking in other Hopi villages, notably Chimopovy,[78] it is perhaps no accident that, despite an emphasis on the values of peace, we find, in Oraibi, the development of a particularly aggressive leadership.

But aggressive though this leadership was, it remained strikingly and tradi-

72 Titiev, 1944, p. 78, text and n. 92.
73 *Idem*, p. 85.
74 *Idem*, n. 143.
75 Leupp, 1907, p. 123.
76 Thompson, 1946, p. 65.
77 Titiev, 1944, p. 4.
78 *Idem*, pp. 83 ff. and 71; cf. also Nequatewa (1936, p. 66) who mentions "all the other villages of second mesa"—that is, all besides Chimopovy—as well as Moenkopi.

tionally fatalistic.[79] Titiev has commented on this fact in a general way,[80] and Edmund Nequatewa, in his "true" story of the epic conflict, has elaborated the point. The chiefs, after having fomented quarrels among the people, as Nequatewa claims they did,

> often "sacrificed" themselves deliberately, in atonement for the distress caused their people in this process and any misfortune befalling them after such an act, even though for the good of their people, was considered right and just punishment.[81]

Yokioma's versions (B and C) express this view most clearly, perhaps because, despite his long-continued fight against the established claimants of the Oraibi domain and an apparently firm conviction regarding the justness of his cause, he still felt so guilty at having broken the socially necessary peace that his action, whether successful or not, had to be paid for with his life.

The representative of the "Friendly" faction, perhaps because he was merely defending a traditional position, envisaged a less harrowing but no less predestined end.

Only Myth A visualized a retributive—though equally unwilled—action: the knife that severs the head of Younger Brother will also divide the trail of Older Brother's life.

Manifestly, Hopi emphasis on unity and unanimity was not strong enough to rule out long, and serious, and presumably not-to-be-avoided feuds. On the other hand, it was strong enough, at least as far as members of the opposition were concerned, to build up feelings of guilt—no matter how just they considered their cause—and to foster the belief that their leader's success would be crowned, not with glory, but with the loss of his head.

Which, if any, of the thematic changes or "private rituals" noted above will survive in Oraibi or some other of the Hopi villages?[82] A cursory examination of eight tales from other mesas[83] shows considerable differences both in the incidence of obviously recent thematic shifts and in the intensity of the felt attitudes. For instance, they show, on the whole, less willingness to change what may be considered, from a comparative point of view, the basic characterization of

79 Kennard (1937, p. 491) writes: "The Hopi regard life as pre-determined in all important respects."

80 Titiev, 1944, p. 74.

81 Nequatewa, 1936, p. 109 ff., n. 4. See also editor's comment on p. 107, n. 3.

82 In this connection see Harold D. Lasswell's (1947, p. 220) discussion of the "situational" and "developmental profile."

83 These include tales collected by Stephen (First Mesa), Voth (Second Mesa), Parsons (First Mesa), Bunzel (First Mesa), Wallis (Second Mesa).

Spider Woman. At times, however, and despite residence in a different village and on a different mesa, there is internal evidence of identification with one or the other of the Oraibi factions, caused, it would seem, by such special ties as those of kinship or affinity.[84]

The time of recording is also important, but it too must be examined in relation to other factors. Did it, or the Tewan provenience of the informants,[85] or a traditional distaste for unharmonious action,[86] account for the lack of any mention of the Americans in the Hopi tales collected by Dr Parsons in 1925 or thereabouts?[87] Tawaqwaptiwa, who told his story to Titiev in 1932, some seven years later, and who exhibited no reticence regarding the malicious behavior or intentions of Spider Woman and her descendant, the leader of the Spider clan, also failed, at least in the excerpts given, to equate "Bahana" with the Americans. In Wallis' tale, however, taken down in 1912 at Shumopovi (a further transliteration of the Second Mesa village), the identification is made repeatedly.

Only new recordings of the Hopi emergence myth can give answers to such questions. But to judge from the limited material presented here, both a good knowledge of the historical situation and familiarity with the narrator's experience and personality are valuable, and perhaps, even necessary adjuncts to further researches along these lines.

Bibliography

Crane, Leo
1926 *Indians of the Enchanted Desert* (Boston).

Cushing, F. H.
1922 "Oraibi in 1883" (in *Contributions to Hopi History* [E. C. Parsons, ed.], American Anthropologist, vol. 24, pp. 253-298), pp. 253-268.
1923 *Origin Myth from Oraibi* (Journal of American Folklore, vol. 36, no. 140).

Fewkes, J. Walter
1900 *Tusayan Migration Traditions* (19th Annual Report, Bureau of American Ethnology, part 2).
1922 "Oraibi in 1890" (in *Contributions to Hopi History* [E. C. Parsons, ed.], American Anthropologist, vol. 24, pp. 253-298), pp. 268-283.

Goldfrank, Esther S.
1926 *Isleta Variants: a Study in Flexibility* (Journal of American Folklore, vol. 39, pp. 70-78).
1945 *Socialization, Personality, and the Structure of Pueblo Society (With Particular Reference to Hopi and Zuñi)* (American Anthropologist, vol. 47, pp. 516-539).

84 Titiev, 1944, p. 84, n. 133.
85 See Parsons, 1926, p. 1.
86 Personal communication from Dr Bunzel.
87 See Parsons, 1926, p. 172, n. 2.

KENNARD, E. A.
1937 *Hopi Reactions to Death* (American Anthropologist, vol. 39, pp. 491-496).
1938 *Hopi Kachinas* (New York).
KLUCKHOHN, CLYDE
1942 *Myths and Rituals: a General Theory* (Harvard Theological Review, vol. 35, pp. 45-79).
LASSWELL, HAROLD D.
1939 *General Framework: Person, Personality, Group, Culture* (Psychiatry, vol. 2 [reprinted in *The Analysis of Political Behaviour*, London, 1947]).
LEUPP, FRANCIS
1906 *Annual Report of the Department of the Interior* (Part I, Washington).
1907 *Report of the Commissioner of Indian Affairs* (House Documents, 59th Congress, 2nd Session, Washington).
MORGAN, WILLIAM
1945 *The Organization of a Story and a Tale* (Journal of American Folklore, vol. 58, pp. 169-194).
NEQUATEWA, EDMUND
1936 *Truth of a Hopi and Other Clan Stories of Shungopovi* (Mary-Russell F. Colton, ed., Bulletin, Museum of Northern Arizona, no. 8).
PARSONS, E. C.
1922 "Oraibi in 1920" (in *Contributions to Hopi History* [E. C. Parsons, ed.], American Anthropologist, vol. 24, pp. 253-298), pp. 283-294.
1926 *Tewa Tales* (Memoirs, American Folklore Society, vol. 19).
REAGAN, ALBERT B.
1931 *The Pictographs of Ashley and Dry Fork Valleys in Northeastern Utah* (Transactions, Kansas Academy of Science).
1933 *Summary of Archaeological Finds in the Uintah Basin in Utah, to Date* (Utah Academy of Sciences).
SIMMONS, L. W. (ed.)
1942 *Sun Chief* (New Haven).
STEPHEN, A. M.
1929 *Hopi Tales* (E. C. Parsons, ed., Journal of American Folklore, vol. 42, pp. 3-6).
1936 *Hopi Journal of Alexander M. Stephen* (E. C. Parsons, ed., Columbia University Contributions to Anthropology, vol. 23, 2 parts).
STEWARD, JULIAN H.
1931 *Notes on Hopi Ceremonies in their Initiatory Form* (American Anthropologist, vol. 33, pp. 56-79).
1937 *Petroglyphs of the United States* (Annual Report, Smithsonian Institution for 1936, pp. 405-425).
THOMPSON, LAURA
1946 *In Quest of an Heuristic Approach to the Study of Mankind* (Philosophy of Science, vol. 13).

THOMPSON, LAURA, and ALICE JOSEPH
1947 *White Pressures on Indian Personality and Culture* (American Journal of Sociology, vol. 53, no. 1).

TITIEV, MISCHA
1943 *Notes on Hopi Witchcraft* (Papers, Michigan Academy of Science, Arts, and Letters, vol. 28, part 4, 1942).
1944 *Old Oraibi* (Papers, Peabody Museum of American Archaeology and Ethnology, Harvard University, vol. 22, no. 1).

VOTH, H. R.
1901 *The Oraibi Powamu Ceremony* (Anthropological Series, Field Columbian Museum, vol. 3, no. 2).
1905 *The Traditions of the Hopi* (Anthropological Series, Field Columbian Museum, vol. 8).

WALLIS, WILSON D.
1936 *Folk Tales from Shumopovi, Second Mesa* (Journal of American Folklore, vol. 49, pp. 1-68).

WITTFOGEL, KARL A.
n. d. *Oriental Society* (Ms.).

WITTFOGEL, KARL A., and ESTHER S. GOLDFRANK
1943 *Some Aspects of Pueblo Mythology and Society* (Journal of American Folklore, vol. 56, pp. 17-30).

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MATERIAL CULTURE OF THE LANGSING NAGAS, NORTHERN BURMA

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INTRODUCTION

THE CULTURE described in this paper is that of one of the many tribes of Nagas who live in the mountainous borderlands of Manipur, Assam, and Burma. My observations were made at two villages near the extreme northeastern portion of the territory occupied by these people, on the Burma slopes of the Patkai Hills.

The Nagas are a numerous group and have apparently been recruited from several sources. From south to north in the Naga country material culture and physical types show much variation. Although the Naga languages are of the Tibeto-Chinese group,[1] they have "very strong cultural affinities with the natives of the Asiatic Islands, notably Borneo and the Philippine Islands."[2] Whatever the origin and prehistoric travels of the Nagas might have been, certainly, at the present time, they vary greatly in physical appearance from valley to valley, and as much in dialect and culture.

Nagas live mainly in Assam and Manipur but an estimated 75,000 live on Burma territory.[3] The major part of this population is composed of the Tanghkul and Kalyo Kengyu Nagas who live in the southern part of this district; the northern part is occupied by small groups who are loosely designated as the Konyak tribes. The Langsing are one of these.

My notes were taken from November 1944 to October 1945 while I was stationed near Mile 50 on the Stilwell Road. I made numerous trips to two villages and had almost daily contact with individuals who were down from the mountain tops for trade.

The two villages with which I am acquainted are Loglai Shim and Big Pani Shim. The former is a collection of about a dozen houses which are scattered for a half mile along a ridge a mile north of the U. S. Army sub-depot of Loglai

1 J. H. Hutton, *The Angami Nagas* (London, 1921). Hutton quotes Sir George Grierson, who, in *Census of India, 1911*, classified the Naga dialects as family, Tibeto-Chinese; sub-family, Tibeto-Burman; branch, Assam-Burmese; group, Naga. The group classification has also been divided into several sub-groups.

2 Col. L. W. Shakspear, Journal, Royal Anthropological Institute, Vol. 44, p. 57, as quoted by Hutton, *The Angami Nagas*.

3 H. N. C. Stevenson, *The Hill Peoples of Burma* (Burma Pamphlets, no. 6, Calcutta, 1944), p. 15.

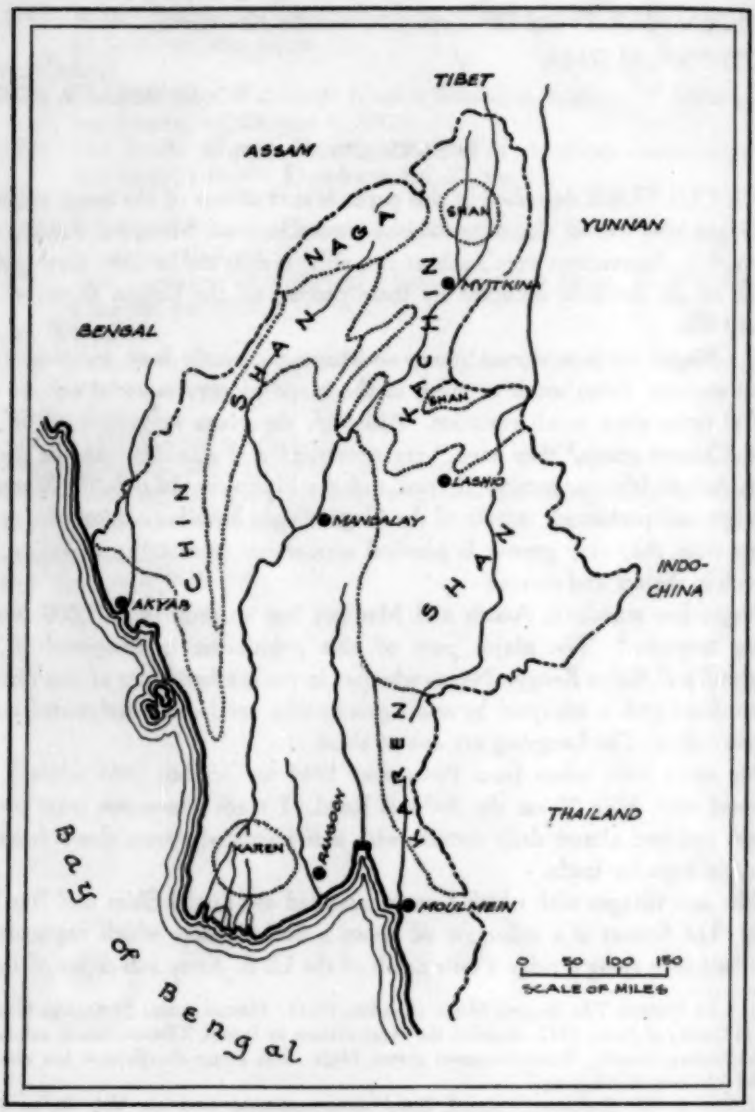


FIG. 1. Distribution of Hill Tribes in Burma
(after Stevenson, *Hill Peoples of Burma*).

at Mile 50 on the Stilwell Road. The name is that of the river, a tributary of the upper Chindwin, which flows by the depot.

The second village, Big Pani Shim, is the larger of the two: it boasts nearly twenty houses which also are spread for a half mile at the crest of a ridge (Plate 1). Big Pani is about two and a half miles west of the confluence of Taguang Creek with Loglai River, at Mile 53. Each village is at about 4000′ elevation, the canyon floor in this vicinity is 2000′.

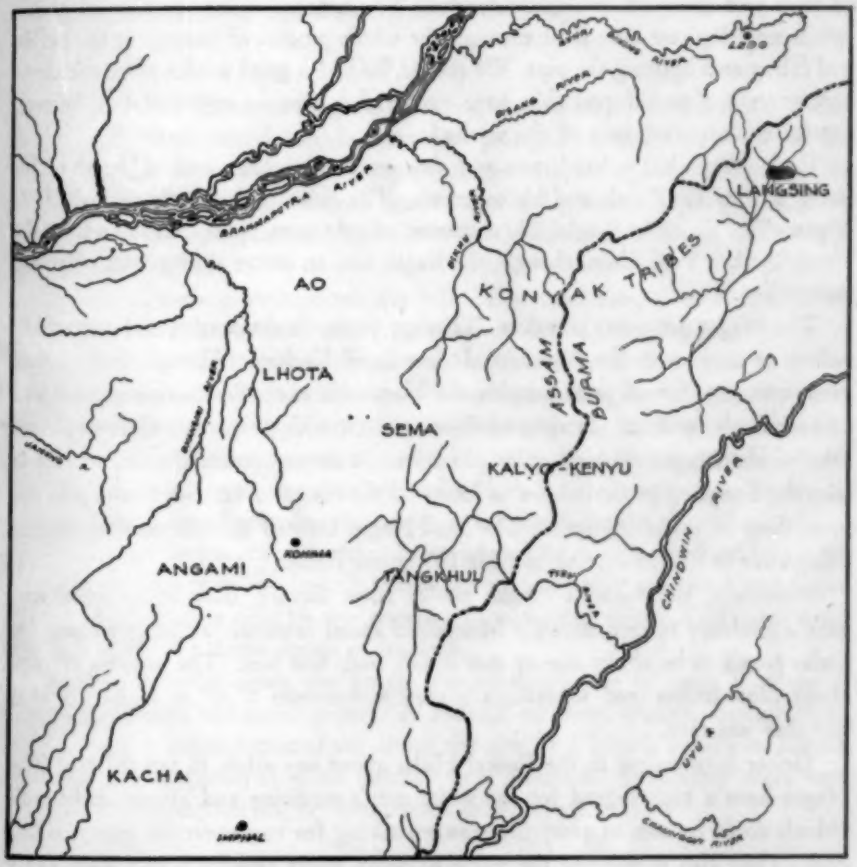


Fig. 2. The Langsing villages in relation to the principal Naga tribes (adapted from a Survey of India map of Assam, 1942, and "Map to Show the Location of Naga Tribes," Hutton, *The Angami Nagas*, p. 5).

I do not know the native names of the villages. By the time I arrived in the district the Nagas and the troops had developed a lingua franca suitable for commerce in rice beer and women, and these names were firmly established. The first might be the Naga name, but the second is, at best, a bastardized name if not one applied subsequent to the arrival of the troops. "Pani" is a Hindustani word for water and the Big Pani refers to a small lake a half mile north of the village.

With few exceptions the Nagas were friendly and were willing to show uses of tools and materials by demonstration. For instance, when questioned about opium smoking one man went through the whole process of preparing the pellet and filling and lighting the pipe. Of course, he had a good smoke after the demonstration and would probably have prepared a pipe in any case but he was careful to show each step of the method.

Each village has a head man and two assistants; these were referred to by the Nagas as the Rajah and his sergeants. The titles undoubtedly are of G. I. origin. The Rajah at Loglai Shim was an elderly man, quite feeble and nearly blind. At Big Pani Shim, though, the Rajah was an active young man of about twenty-five.

The Nagas are great travelers. They go to the Brahmaputra and Irrawaddy valleys to trade with the Assamese, Indians, and Kachins. Though they profess great contempt for all these peoples, the Nagas are not averse to using tools and utensils made by them. In spite of these contacts with peoples of higher culture, that of the Nagas remains quite primitive. A strange contradiction to this is that the Langsing professed not to know of the Singpho (Kachin) who live not more than twenty miles north. The local Nagas insisted that the nearest Kachin village was at Shingbweyang, at Mile 105 on the Road.

Physically, the Konyak Nagas are of short stature, dark complexion, and have a tendency toward strongly Mongoloid facial features. Average stature for males seems to be about one or two inches over five feet. The women average about three inches less. Occasionally men and women 5′ 6″ to 5′ 8″ are seen but they are rare.

Goiter is prevalent in the Patkai Hills; about one adult in ten suffers. The Nagas have a high regard for the white man's medicine and almost daily individuals could be seen at army dispensaries asking for treatment for goiter, colds, cuts. They also recognized the value of army insect repellants and were eager to obtain bottles of it; this was particularly effective against leeches. Many, men and women, complained of stomach or intestinal disorders; other diseases of

common occurrence are malaria, colds, and probably tuberculosis. The last is not based on any diagnosis but merely observation of tubercular-sounding coughs.

I asked several men whether the term Konyak was familiar. I had response from only one man who said yes. He seemed to know the word but did not associate it with Nagas of this vicinity. He understood the purport of the question and said that the local Nagas are called Langsing Nagas. He identified Nagas in the Ledo-Margherita district (Assam) as Namdam Naga. He also knew of the Angami, Sema, and Lhota, nodding and indicating that they live far over the hills. He had never visited any of the latter groups.

THE COUNTRY

The Patkai Hills are not high in this area: the maximum elevation is probably less than seven thousand feet, but they are precipitous. Seen from the air the hills appear as seven or eight long regular ridges with the westernmost ridge (the one which forms the Assam-Burma border) as the highest. On the ground these ridges are so cut up by canyons and draws that there seems to be no order in the structure of the hills.

A heavy jungle growth covers the hills. The trees rise up to form a dense crown a hundred feet or more above the ground level. During logging operations trees with clear straight trunks of one hundred feet were often felled.

The forest is of mixed deciduous and broadleafed evergreen species. Approximately half the trees in the district lost their leaves during the winter rains. Two species of oak and a poor grade of mahogany were the only trees familiar to us. Other trees which were common were identified, by their native names, by an officer of the Indian Forest Service, as mora, hulong, hulock, and tita sopa.

The forest floor is covered with a heavy growth of shrubs which seldom reach a height of more than ten feet. Between the ground cover and the forest crown is open space broken only by tree trunks and numerous lianas. Old farm clearings are filled with dense stands of bamboo.

Judging by noise alone, the jungle was inhabited only by large numbers of Hoolock's gibbon and barking deer. In addition to these, though, sambur, tiger, flying foxes, a leopard-spotted cat about the size of a North American bobcat, wild pig, and a species of small monkey were common. Apparently there were no wild elephants, buffalo, or rhinoceroses in the area.

VILLAGES

Villages in the Langsing district are scattered collections of only a few houses. Each of the two I have visited, and four other villages I saw from a distance, are

of the same pattern. In general, the village is located near the crest of a ridge, on a southerly slope, with the houses strung out for a half mile or more. There is a tendency for the Nagas to build their homes in clusters of three to six houses, but isolated homes are common, and I know of one which is a half mile from the nearest neighbor.

Paddy fields may be located near the houses or at a considerable distance. Here also, there seems to be no pattern. Opium poppy patches, however, are always planted near, if not contiguous to, the houses.

In addition to the dwellings the village contains a number of storage houses. These small structures are built close to the fields. Many householders make provision for food storage in the rear section of the home, so that the number of storage houses is not as great as that of dwellings.

Temporary villages are located on the banks of the smaller streams. Additional fields are planted near these villages and fish weirs are built across the streams near them. Houses in the temporary, or seasonal, villages are lean-to's and quite small.

Unlike the villages of the Naga Hills district, the Konyak settlements are not fortified, nor are there any rudimentary traces of protective devices such as walls, moats, or watch towers.

HOUSES

Naga houses are 25 to 100 feet long and from 15 to 20 feet wide. The floors are raised three to ten feet above the ground (depending upon the slope of the hillside) and are supported by several parallel rows of poles. Floor joists of wooden or bamboo poles are laid on the uprights, then the floor laid. The floors are of split bamboo. Bamboo is laid upon the ground and beaten with a club until it splits; it is then hammered flat to make a sort of crude planking for the floor.

The side walls of the houses are six to seven feet high and are set in about three feet from the edges of the floor; this makes a narrow platform along each side of the house. This platform is not used, except for occasional storage of baskets or tools; the purpose of the offset is to keep the floor dry; the roof descends past the wall and ends nearly flush with the floor.

Walls are made of a matting of plaited bamboo strips supported by poles of wood or bamboo; rafters are laid on the wall supports and are carried up to make a high pitched roof. The roof tree is generally fifteen feet or more above the floor. Bundles of elephant grass, which grows as high as fifteen feet in this locality, and jeng, a leafy cane, are used as thatching.

The floor space of the house is divided into either three or four parts. At the front of the house is a long platform which projects beyond the roof. The platform is as wide as the house and as much as twenty-five feet long. Activities such as drying foodstuffs, winnowing grain, and spinning are done on the platform during dry weather. If this platform is not attached to the house it is sometimes built separately forty or fifty feet away.

The second section of the house is that which is most used. It is a "front porch," under the roof but with an open end. The front portion generally faces in a southerly direction. This room takes up about one-third of the floor space under the roof. In it are one or more fireplaces. I have seen three, but one or two fireplaces are the rule. The fireplaces are close (three to four feet) to one wall and tend to be built near the rear of the room. Along the opposite wall there is often a low bench, three feet wide and six to eight inches high, which serves as a sleeping platform. During the day bedding is rolled up and left on the platform. At the rear of the room is a wall of plaited bamboo strips.

On the walls of this section skulls are hung as hunting and feasting trophies, together with spare tools, weapons, baskets, bags—anything which can be hung from or stood against the wall to get it out of the way. From the roof, herbs, ears of maize, and opium poppy pods are hung. The center portion of the floor is kept clear and when visitors arrive small plaited mats are put down around the fireplace as seats.

Enclosed by a partition at each end, the center room of the house is used only by the family. A narrow door in each wall is covered by a blanket. It is to this room that the women retire when strangers are about. I have seen this section of the house in two deserted dwellings and have had brief glimpses into the room in occupied houses. Another bed platform is located within the room, and one or two additional fireplaces. Meals are cooked here and drying clothing and food are hung from ceilings and walls as in the other room. This section occupies about one-half the floor space under the roof.

The rear section of the house also has an open end. It is a small area given over to large storage baskets and one or two large wooden mortars for hulling rice. Rarely, the "sun platform" extends from this end of the house.

Entrance to the house, from either end, is by means of steps of notched logs or bamboo. The logs are placed side by side and from three to fifteen may be used.

In contrast to houses farther south and southwest, there are no house horns, no carved or painted wooden walls. The stone platforms and shingle roofs of

the Angami and Sema are also missing; the entire construction of the Langsing Naga house is of poles, bamboo, and thatch.

Under the houses are pens and coops for poultry and livestock. The animals are allowed to forage at will during the day and are penned only at night.

Shelters and Lean-To's. At every paddy field, or group of fields, is a shelter. These are small tent-like structures, raised two or three feet off the ground and are just large enough for one or two persons to sit or lie at length.

Along the creek beds, where fields and fish weirs are located, good-sized lean-to's are built. The lean-to's are ten to twenty feet long and six or seven feet wide. A rough floor is made by placing a series of poles on the ground, then a layer of bamboo poles. A fireplace is built on the floor (Fig. 3).

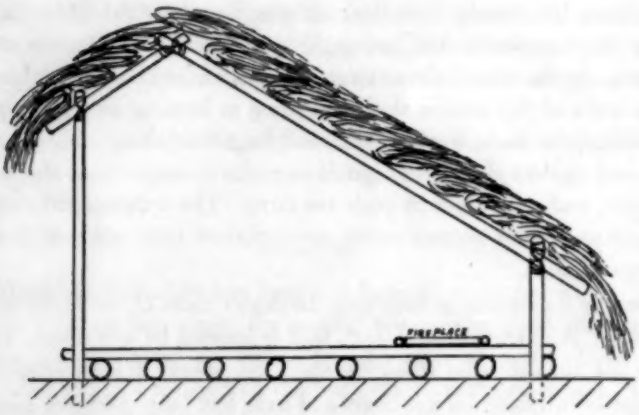


FIG. 3. Cross-section of shelter near fish weirs.

Storage Houses. Storage houses are small, square (eight to ten feet) structures open on one side. They are built up on posts so that the floor is three to six feet above the ground. On each of the supporting posts is a rat guard. The old type guard is a funnel of dried banana leaf, but tin is now sometimes used.

In general, the storage house is like a small dwelling. The walls are of plaited bamboo strips, the floor of bamboo poles, and the roof thatched. The open side may face in any direction, though the majority open southward.

Within the house are two to four large storage baskets, a few winnowing and burden baskets, but nothing else. No mortars for hulling the rice are in or near the storage house; that work is done at the dwelling.

Morungs. At neither of the two villages near Loglai is there a morung (Young Men's House) or any other structure of ritual use. One possible exception is a house on the trail from Tagaung Creek to Big Pani. There, standing a hundred feet from a dwelling, is a large building which consists only of a roof. The floor is of dirt (at ground level) and there are no walls. Hanging from the roof are many trophy baskets but the house has no other furnishings. The man who dwelt nearby discouraged any inspection of the place though he was friendly enough when one visited his home.

Fireplaces. Four small logs are laid on the floor to form a square about two and one-half feet across. This is filled with earth. Several sticks are kept smouldering on the hearth. For a quick, hot fire slivers of split bamboo are thrown on the fire; normally wood is used.

Over the hearth are a pair of shelves for drying and smoke-curing wooden tools, weapons, and baskets. The shelves are square and of the same dimensions as the hearth; they are hung one above the other and are suspended from the ceiling. Each fireplace in the house is equipped with a set of drying shelves. The shelves are made with a square frame of slender bamboo and a loosely plaited "floor." They are filthy affairs and long festoons of soot hang from them, but smoke-curing seems necessary for proper preservation of baskets and wooden tools. I have several crossbows; all but one have been cured. The unsmoked specimen has warped and, while still in Burma, became mouldy; the other bows are in excellent condition.

PROPITIATORY DEVICES

House Poles. Near each house, usually at a corner, is a cluster of bamboo stakes, from six to twenty in number and from four to ten feet high. At the tops of these stakes are impaled egg shells, bundles of feathers, strips of cloth, or small baskets and gourds. Not all the stakes bear an object; I do not know whether they have fallen or whether none were ever attached to the poles. The stakes are stuck in the ground in an irregular cluster about a foot in diameter.

Hutton says of the Angami,

> During the building of houses bamboos armed at the top with panjies pointing four ways are put up at each corner to keep off evil spirits, or to prevent the possible misfortunes consequent on anyone's inauspiciously praising the work.[4]

4 Hutton, *The Angami Nagas,* p. 53. Panjies are short, sharpened bamboo slivers tied together so that at least one point sticks up when they are thrown on the ground. They were formerly scattered around fortified villages or thrown on trails by retreating warriors.

I suspect that the Langsing poles are replaced from time to time, for I have seen no rotten or fallen poles near occupied houses.

Poles at the Fields. Poles similar to the house poles are erected near paddy fields and opium poppy enclosures. These bear small baskets or strips of cloth and are found in groups of five or six.

Poles on the Trails. At a fork of a trail one day I saw a four foot bamboo stake. The top of the stake had been slashed twice to form a fork in which an egg had been forced. Below the egg two discs of sundried clay were tied with a cord. At another trail fork, on another day, I saw two stakes on each of which was hung a small basket which held some lantana flowers. A Naga came by just then and told me that a man in the house above was ill.

On another day I went up a trail and, about a quarter of a mile below the houses I was to visit, came across a trail block built of a bamboo stake driven into either side of the trail; these supported a cross piece about four feet above the ground. I continued to the houses but noticed nothing out of the ordinary. When I returned to the canyon of the Loglai I took another trail and found a similar device. The next week, when I returned to the houses, both trail blocks had been removed.

TRAILS

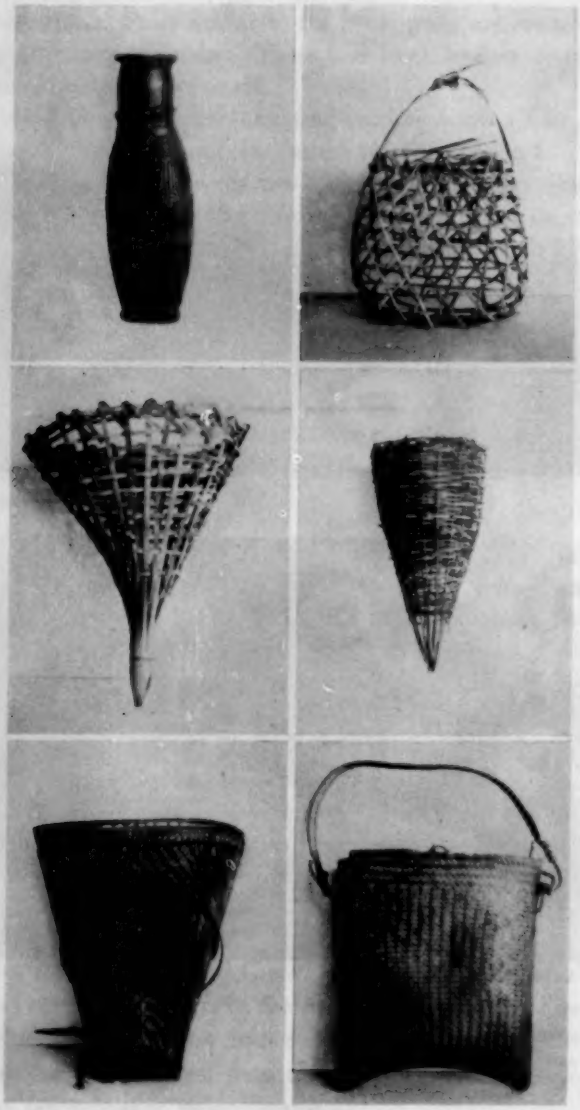
The Nagas maintain great cross country trails. The best known trail was one now known as the Refugee Trail. Its course, from Shingbweyang to Ledo, a little more than a hundred miles, was practically identical with that of the Ledo Road; consequently the trail no longer exists. When the Japanese took northern Burma in 1942, thousands of Indians, British-sympathizing Burmans, and a few British escaped into Assam over this trail. Some Burmans attempted to save their elephants by taking them to India over the trail; since the flight was made during heavy rains the trails soon became a quagmire and many persons floundered and died along the way. It has been estimated that approximately 25,000 fled over the trail from northern Burma and that nearly 10,000 failed to reach Ledo.

I have seen one cross-country trail. It leads from the canyon of the Loglai, passes for three miles up Tagaung Creek, climbs to the crest of a long ridge, then just leads to the south, always on the crest of the ridge. I followed this trail for several miles one day. In that distance it reached no village, though a number of cross-trails which branched from the main one led to villages. I do not know how long this trail is or its destination.

The cross-country trails are surprisingly well maintained. They are two to

LANGSING VILLAGE AND HOUSE

ABOVE: Part of Big Pani Shim with an opium poppy patch in foreground; BELOW: Langsing house.



BASKET TYPES

UPPER LEFT: Gummed water bottle; UPPER RIGHT: Basket for carrying two chickens; CENTER LEFT: Bamboo gathering basket; CENTER RIGHT: Another type of gathering basket; LOWER LEFT: Woman's burden basket; LOWER RIGHT: Burden basket usually carried by men.

four feet wide; each traveler helps keep the trail clear by hacking at encroaching brush with his dao.

Naga trails have a bad habit of going straight up a slope with no benefit of switchbacks. To climb a trail is quite an arduous task, for the slopes of the Patkai Hills are precipitous. On the steepest slopes of the cross-country trail just described the Nagas have constructed a long series of steps. The step treads are made of one to three small sticks laid on a leveled platform of earth and held in place by a vertical peg at each end of the step. The shorter trails to camps and villages lack the refinement of steps, but toe-holds are cut into the clay slopes at the steeper parts.

There is a great network of trails throughout the district; these connect villages, fields, and isolated houses. A single house may have as many as three trails leading from it to villages and other distant houses.

CROPS AND FARMING

Fields are often at the very crest of a hill but one may find them anywhere: below the crest, halfway down the hill, or even in the canyon bottoms. The fields high on the mountain slopes are used for raising paddy or other cereals and those on the bottom lands, or on comparatively level benches, are planted to other crops such as tobacco and squash. There is no irrigation farming in the Langsing district; paddy and all other crops are raised by the "jhum" or dry-farming method—that is, if farming can be called "dry" in a region which averages 150 inches of precipitation a year. Some crops are raised during the summer months, others during the winter.

Fields for the cereals, except maize, are cleared in April or early May, before the southwest monsoon begins. Old fields are cleared by burning off the brush. This is done as soon as the brush can be burned after the winter rains have ended. New fields are cleared at the same time.

On the slopes and crests of the hills there are large patches of jungle where the trees grow sparsely and the hardest job in clearing a field is brushing. I saw one new field cleared. One man and his wife did all the work. The location chosen was a spot on a steep hillside with no large trees; the largest had a butt diameter of no more than a foot. The man felled the trees with a rather dull hatchet (I have seen stumps which apparently were cut with the dao) and his wife cleared the brush. The fallen trees and the brush were allowed to dry for two weeks, then were fired. The stumps and the unburned logs remained in the field.

Fields average about three-quarters of an acre in size. There seems to be no

policy of deciding the location of a field other than determining a spot which can be cleared with a minimum of labor. No terracing is done by these Nagas.

Rice Culture. One variety of rice is all I have seen: a small, oval, white kernel in a light buff hull.

Rice was planted during the latter part of May, two or three weeks before the advent of the monsoon. I saw only women working in the fields at planting time.

In each instance in which I saw women in the fields, several worked together. They started at the lower edge of the field and worked up. Each had a dao; she stuck the end about an inch into the soil and dropped in a few grains of rice; as she passed up the field she scuffed dirt over the holes with her feet. Holes were made about two inches apart.

I was not in the district at harvest time, October. The rice is stored, unhulled, in large round containers of plaited bamboo and kept in the granaries or in the rear rooms of houses. It is taken from the storage baskets in small quantities (about a peck or two, as a rule) as it is needed. The rice is hulled in wooden mortars by women or young boys. After the hulls have been removed the rice is winnowed on the sunning platform.

Much of the rice is brewed into rice beer, a clear, sour drink similar in taste to the "home brew" of prohibition days.

Other Crops. Millet, Job's-tears, and several other grains (which I did not recognize) are grown but not as extensively as rice. Maize is a common crop. In contrast to the other cereals, it is planted in October, after the southwest monsoon, and is harvested in May. I saw only one variety of maize. The ears are eight or nine inches long and bear bright yellow kernels with an occasional blue kernel. The kernels are round and full; it appears to be a good variety of maize.

Tobacco and hasheesh are grown together. The only field of these crops I have seen was on the canyon floor. I saw the field in early December when the plants were only a few inches high and did not again visit the locality, so I cannot say when the crops mature. Other common crops, which are not raised in large quantities, are chili peppers, two varieties of squash (one similar to zuchinni, the other like a small badly-formed Hubbard) and a small yellow tomato.

Fruit trees seem to be cared for, if not actually planted. Lemons and figs grow near the houses and bananas are allowed to mature wherever they may appear. There seems to be no attempt to improve the fruit. The lemons are very sour with little juice; the figs are small; and the bananas are of the wild type

called "monkey bananas" which are small, pucker the mouth, and tend to have large black seeds.

Uncultivated Foods. At least half, and perhaps more, of the Naga vegetable diet is of uncultivated plant foods. The women gather a great variety of roots, tubers, bulbs, seeds, fruits, and greens. Some of these are eaten immediately after gathering; others are dried and stored.

Drink. Hutton says of the Sema[5] that the staple drink is rice beer, tea rarely used, and water only as a last resort. The Langsing frequently drink water, with meals and on the trail; in addition much tea and rice beer is consumed. A pot of tea is almost constantly on the fire in some houses; a guest is always offered a cup of tea or beer. Beer is taken either cool or hot. Although a single cup of beer is sometimes drunk, the Konyak, as a rule, drink it in large quantities when a group of men get together. I have seen some men who were a little ill from too much beer, but no drunkenness.

LIVESTOCK

Mithan. A wealthy family will have a half dozen mithan *(Bos frontalis).* They are allowed to wander at will through the jungle but may often be seen near the houses. Apparently these are butchered only at feast times.

Swine. A small razor-back type pig is kept. A household may have as many as a dozen. They are fed greens similar to rhubarb and sometimes a mash in long wooden troughs.

Goats. A small black and white goat is also numerous. Kids are played with as pets and have the run of the house as much as dogs.

Fowl. The chickens are of the same stock as the jungle fowl; they are small brown birds about the size of a leghorn. Many chickens are kept. At one house I saw two birds which I believe were turkens.

Dogs. They are small, brown, short haired, and slightly resemble a chow. Good watch dogs, but friendly after one is in the house. Dogs are well cared for. This type of dog apparently is widespread throughout northern Burma.

All animals, except dogs and mithan, are kept in pens under the houses at night, but are allowed to roam through the village during the day.

WEAPONS AND HUNTING

The principal weapons of the Nagas are the crossbow and spear; in addition to these and knives, some men have a flintlock musket. The latter are probably

5 J. H. Hutton, *The Sema Nagas* (London, 1921), p. 97.

Birmingham trade muskets, though no manufacturers' stamps or dates are to be found on them.

Crossbow. The stock of the crossbow is made of hardwood. Apparently no particular wood is considered indispensable for the stock; I have seen bows made of at least two different woods, and probably three, though the wood is difficult to determine after the bow has been smoked. I have not seen the stock made, but it is most likely that saplings are split in order to get the wood; it seems unlikely that wood from the mature trees would be used, the labor involved would be too great.

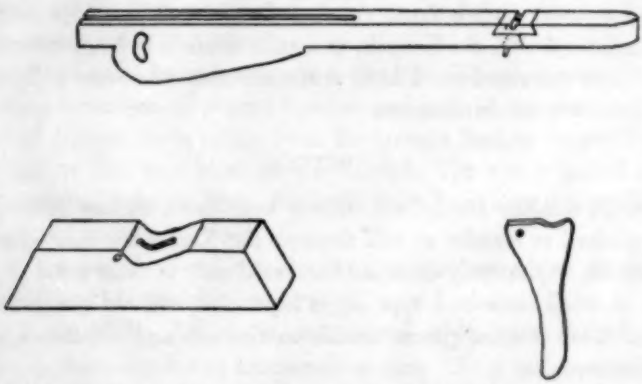


FIG. 4. Parts of the crossbow: stock, trigger plate, and trigger (trigger plate and trigger, × ¾; stock, × ca. ⅛).

Stocks are eighteen to twenty inches long and about a half inch thick. The forepart of the top surface is grooved to hold the bolt. There are two holes through the stock. Near the front is a large oval hole which accommodates the stave; the second hole runs vertically through the stock just behind the bolt groove and houses the trigger assembly (Fig. 4). The trigger is of bone and is hinged with a splinter of bone or a short piece of wire to a notched bone plate which is dovetailed in the upper portion of the stock and glued in place with a gum.

The bow for this weapon is of split bamboo with the inner, concave, surface to the rear. Wooden bows, such as made by the Sema,[6] are not used. The bow is three to four feet long, and is tapered at each end. It fits tightly into the hole

6 Hutton, *The Sema Nagas*, p. 22.

in the stock and is wedged more firmly by shims or wedges of bamboo splinters. The bow is never glued in place.

The bow string is of a fiber which resembles jute, but I am not sure of its identity. I have seen Nagas returning from the bazaars with small quantities of jute. The string is taut when the bow is in position of release; to pull the bow back takes more than a forty-pound pull. The string is placed in the notch on the upper surface of the trigger assembly plate; only a slight pressure on the trigger releases the string.

To use the weapon a Naga places one end of the bow on the ground, presses near the center of the bow with a foot, and pulls on the other end. With the bow string in position the bolt is placed in the groove and the crossbow is ready to fire. The man stands with his legs slightly flexed or kneels with left elbow on leg and holds the end of the stock immediately in front of his right eye so that he can aim along the top of the stock.

Bolts are small and untipped. They are short (about ten inches) and of a straight length of coarse grass. The point is sharpened. The feathering is a triangular fold of a leaf of grass, the broad end to the rear, and is tied in place in the split end of the bolt by a slender piece of fiber.

I have fired the bow for distance several times. The arrow flies true for about a hundred feet and then its course becomes erratic. Maximum flight is about three hundred feet. When questioned, Nagas intimated that birds and small mammals are hunted with the bow. The only time I saw a Naga try to hit a live target, the man missed a bird about the size of a robin three times at a distance of forty feet. The bird finally flew away unharmed.

When making the bow a Naga fires many arrows. The flight of each is noted and then the end of the bow which is heavier is carefully scraped until the bow is true. It is then placed on the rack above the fireplace until the wood and bamboo have cured.

Crossbows and spears are painted with the blood of jungle fowl (wild chickens). The Nagas specify that jungle fowl and not domestic birds must supply the blood. After painting with the blood the weapon is rubbed so that the wood takes a warm red stain.

A piece of gum (like a blackened wad of chewing gum) is carried on the crossbow. It is stuck to the stock. The gum is rubbed on the bow string from time to time to make the string water-repellant.

Spear. The spear is of tough wood with little spring. It is three quarters of an inch to an inch and a quarter in diameter and from four to five feet long. The iron blade is a foot long and is of a single plate of iron, one end of which is

beaten into shape as a socket for the shaft (Fig. 5). To increase the strength of the joint a piece of wire is sometimes wrapped around the base of the blade. The counterpoise is similar to the blade but blunt and spoon shaped and is seldom more than four inches long.

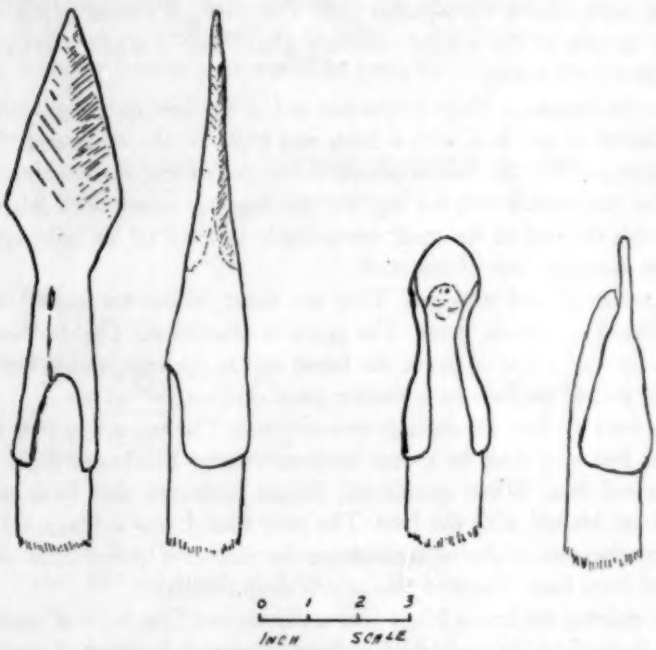


FIG. 5. Blade and counterpoise of spear.

The spear is well balanced but, like the crossbow, seems an unreliable weapon. It is used only, I believe, as a thrusting spear to kill large animals which have been caught in snares or traps.

Pellet Bow. The pellet bow to the Naga is no more than a boy's toy. The bows are three to four feet long and made of a long splinter of bamboo. The string is a strip of rattan, tied to each end of the bow with an overhand knot and split a little above the middle point. The split portion of the string is spread with a one-inch length of notched bamboo splint and a pocket is plaited to the divided section using a split piece of rattan. Small pebbles are used as projectiles; no clay pellets are made. Boys use the bow against birds and stationary

targets. Occasionally they hit the target but their aim is erratic, as is to be expected with such an inaccurate weapon and such irregularly shaped missiles.

To fire the bow the archer deflects the pocket to his right in order that the pellet will clear the bow. The bow-hand position is a little below the middle point of the bow. It is very easy to cut or bruise the thumb when firing the pellet bow.

Knife (Dao). The Naga knife should, I believe, be considered a weapon even though its chief use is as a brush knife and even as a hoe and cultivating tool. No Naga away from home is ever without his dao; even small boys carry them.

The knife has a long blade, fifteen inches or more, which is wider at the tip than at the base. The tip of the knife is either square or concave. The handle is of wood with a grip of plaited rattan strips.

Only one Naga in the district was skilled as a blacksmith. He lived in a village which I did not visit. It is four or five miles down the Loglai River from the mouth of Taugaung Creek. This man apparently made most of the spear points and dao blades used in the vicinity.

The scabbard for the knife is a shallow trough of wood. As a rule the only decoration of the scabbard is a coating of red lacquer on both faces of the scabbard near the lower end. Once in a while a conventionalized floral pattern is carved at the upper end of the scabbard. A sling of plaited rattan strips is tied to the scabbard and the sling carried on the right shoulder so that the knife and scabbard hang under the left arm with the knife handle over the left breast.

Other smaller knives are used for skinning and carving. These knives are slender and mostly about eight or nine inches long. They are carried in sheaths made of two pieces of wood bound together by a tight plaiting of rattan strips. Some men carry these knives tucked under the longyi at the waist; others carry them in bags or baskets.

Traps and Snares. I have seen no traps or snares, but they are used by the Nagas. A friend told me of seeing several Nagas making a large snare of ropes which they said was for buffalo. After the buffalo is snared, it is killed with spears. Smaller snares must be used also, for I have seen Nagas with many birds and small mammals, alive, which they had brought down from the hills to sell. Among such animals I have seen are monkeys, green pigeons, parrots, jungle fowl, and a barking deer fawn.

Shields. I have seen one shield. It was of buffalo hide a half inch thick. The shield was four feet high and two feet wide. It was creased and bent down the middle line so that two deflecting surfaces were presented to the enemy. A line

of holes was drilled on either side of the crease into which were woven rattan strips to hold in place a piece of slender bamboo which was fitted in the crease at the back of the shield. The bamboo extended the full height of the shield; to it was attached a plaited hand grip a little above the mid-point.

Trophies. Mithan skulls are hung on the walls of the houses. On each skull a small bundle of a reddish grass is tied; the grass is fastened over the "face" of the skull. Other skulls hung on the walls are gibbon, barking deer, sambur, carnivores. Each skull has its own decoration or offering of grass. Apparently the grass is tied on as the skull is hung and never replenished, for on older skulls only a few fragments of the grass remain.

From the roof-trees hang closed baskets. For a long while I did not know what the baskets contained; one day I went into a deserted house and discovered that some of the baskets had fallen; they contained more skulls. I can give no reason to explain why some skulls are hung on walls and some kept in baskets hung from the ceiling. There was no indication of a grass offering attached to the skulls kept in the baskets.

The Angami Nagas have a definite system of priority rights for warriors when a man has been killed. The first man to strike the fallen enemy has the right to a certain part of the skull; the second man takes another portion as his share, and so on. There seems to be some similar arrangement among the Konyak Nagas in regard to slain animals. Often a mandible, or even a half mandible, or the skull alone will hang from the wall as though the kill had been shared with someone else.

Warfare. As I have said before, there is no indication in the Langsing Naga village that the villages were ever fortified. Similarly there is no evidence that heads have ever been taken by these people. I kept a sharp lookout for human skulls, or portions of skulls, but have seen none. Only twice did I hear a Naga make reference to hunting humans. Once was at a time when the Nagas were all telling that three Japanese had parachuted into the jungle nearby (no such thing had happened). At that time I was at Loglai Shim and was talking with the old man who owns the shield I have just mentioned. With the shield and spear in his hands he said, "Japanese," then crouched, crept forward, and made a stab at the supposed enemy. He then threw down the spear and drew his dao and made a swipe as though he were cutting off a head.

The second occasion was when three young men saw the basket hat I had just purchased. They volunteered the information that only men who had taken a head were permitted to wear such a hat and that only one man at Loglai Shim, an old man, could wear one.

FISHING

The Loglai River is too large and swift for Naga fishing methods, but there are a few smaller tributaries to the river across which fish weirs are built. The Naga weir is a simple structure. Upright poles are set in the stream bed at intervals of three or four feet; these are supported against the flow of the stream by pole braces. Horizontal poles are lashed to the uprights; these are spaced about a foot apart and are the support for a rough matting of bamboo and grass.

Three or four small gaps are left in the weir matting so that basket fish traps may be attached to the weir at the gaps. The traps are large, three to four feet long and a foot or more in diameter at the open end; they taper almost to a point at the other end. At the mouth of the trap the plaiting is turned in for about a foot to make a sleeve so that fish cannot escape from the basket.

Fish caught in these traps are large: they weigh as much as thirty pounds. They are large pale fish with mouths like suckers.

In addition to the weirs and traps, Nagas also fish with nets. The nets are of the casting type commonly found in India. They are eight to ten feet square and weighted with small lead pellets or pebbles. Fish nets are woven by the Nagas but not all men know how to weave them. Some are casting nets; others are small, three feet square, with weighted edges, and are used to trap fish as they cross shallow portions of the stream bed. Several persons will stir up a pool and a couple of men stand over narrow channels to scoop up the fish.

CLOTHING

Men. Men wear a longyi (a tubular skirt) which hangs from the waist. While on the trail, or working, the longyi is pulled up so that it hangs only to the knees; at home it is often dropped so that it falls nearly to the feet. The cloth of the skirt is the finest of Naga textiles. The garment is made of two widths of cloth, that is, about thirty-six inches wide, and is about four feet long. The upper portion is rolled at the waist, then held in place by twisting the fold and forcing the loose end under the roll.

On the head a loose turban of white or purple cloth is worn; it is smaller in size than the women's turbans. The turban cloth is loosely woven and is about ten inches wide by three feet long. There is no standard method of wrapping the turban.

The torso may be covered with a short black, vestlike garment or with any shirt or jacket a man can find or acquire; many men go with the upper part of the body bare.

Women. A black skirt, of coarser cloth than the man's, is wrapped around the body below the armpits; both shoulders are bare. At camp, when no strangers are about, the upper part of the skirt is often dropped and the tie made about the waist. In contrast to the men, who merely knot the ends of their skirts, women tie a piece of cord around the body just above the breasts, then roll the skirt down over the cord. Old women commonly go with the breasts bare.

A black or white jacket with sleeves to the wrist is often worn. The jacket is seldom fastened in front but is always equipped with buttons; the buttons may be of coins (quarter rupees preferred), carnelian, or a shiny black stone similar to that used for ear plugs.

Around the village a woman often wears nothing on the head but while traveling a rectangular piece of cloth (about one and a half by three feet) is laid on the head with the ends thrown back, or wrapped as a loose turban.

Children. The child's dress is a copy of that of adults of the same sex but ready-made clothes bought at the bazaars are common. Children rarely run about naked; even infants wear a loose dress which is slipped over the head.

Infants are carried in a sling of cloth on the mother's back. The sling is knotted over the left shoulder with the baby's head near the right shoulder. Small girls often care for and carry the infants; it is a common sight to see a child carry in a sling a baby half as big as she.

Hair Dress. The younger men have their hair cut quite short, in European fashion, but older men wear the hair nearly to the shoulders. The hair seems to be seldom combed or washed and presents a dirty and ragged appearance. As a rule the hair is merely gathered under the turban but I have seen men tie loose overhand knots with locks of hair so that the whole mass was contained close to the head. Men also coil hair in a loose bun at the back of the head.

Women do not cut their hair: it is neatly combed and worn in a loose knot at the back of the head. Old women leave the hair uncombed and loose.

Rain Hats. Large rain hats, of the type commonly associated with Chinese coolies, are worn by both sexes. The hats are well made and are from twenty to thirty inches in diameter.

The hat is made of a layer of either bamboo or banana leaves (both are used) held in shape by loosely plaited basketwork frame above and below. The hat is held together by thin fibers which are sewn through, and around, the "brim." The hat is held in place with a fiber cord which is tied under the chin.

Bags. A Naga man, when on the trail, always carries a cotton bag—even if he has a burden basket on his back. There are two types of bags: plain white ones and Kachin-type decorated bags.

White bags are made of narrow (one and a half to two inches) strips of twilled cloth which are sewed together. I believe that these strips are woven separately. One strip is long enough to be carried over the shoulder as a strap; the ends of the strap are carried below the bag an inch or two as a fringe.

Kachin-type bags are beautiful, woven in one piece. The two ends of the cloth are of white or black plain weave, and of fine thread. When the bag is finished these ends are turned inside to serve as a lining. Next, adjoining each of the ends, is a length of twilled, black, cloth. The upper portion of the bag is decorated with colored threads. Most bags have a woven design; in this case the weave is plain with diamond twill designs; the diamond twill weave carries the color. Bags on which the design is embroidered have this upper portion woven either with plain or twilled pattern. Colors are usually red, yellow, and blue, though any color available may be used. Designs are diamond shaped; sometimes two or three concentric diamonds, sometimes a diamond with a solid diamond or cross inside. There are generally red bands at top and bottom of the decorated panel.

An eight-cord braid of colored yarns is used as shoulder strap. The sides of the bag are sewn to the braid and the ends carried as tassels below the bag.

Blankets are white cloth, thirty-six inches wide by three to five feet long (two widths of cloth). Sometimes two or three narrow bands of red are woven into the cloth near each end. Ends have a short fringe. The blanket may be used as a cape during cold weather; to make this, a cord is tied to the two corners at one end of the blanket; then the blanket is thrown over the shoulders with the cord in front.

Although plain white blankets are the rule, once in a while a black one is made. I have seen one black blanket, also used as a cape, which was decorated with small embroidered stars of red, white, and yellow thread (almost as heavy as knitting yarn). On what I considered the upper side, the stars were well made and spaced about six inches apart in rows, on the under side the ends of the threads hung free about an inch and a half. When the woman put on the cape, however, she put it on so that the fringed surface was exposed.

ORNAMENTS

Men. Necklaces are no more than a few beads worn on a cord around the neck. The beads almost invariably are of an orange colored stone but occasionally glass beads or perforated coins are worn. The stone beads are approximately a third of an inch in diameter and about three-eighths of an inch thick. I once saw a man with half the mandible of a large carnivore suspended from his

necklace; he indicated that it was from a tiger. The bone had been painted with red lacquer but the teeth were unpainted.

Earrings are more commonly worn than necklaces, and are of simple construction. Loops (one to one and a half inches in diameter) of fine gauge copper wire are hung from perforated lobes. Sometimes the wire alone is worn; other men wear a bead or two strung on the wire.

Silver rings with either an orange colored stone or a silver coin (quarter or half rupee) as inset are worn. The band of the ring is always wide and plain.

Leg ornaments consist of thirty or forty narrow rings of grass covered with a black paint or lacquer worn on the leg just below the knee. Hutton[7] states that the Angami consider these rings to be of value in climbing hills but that they seem to cause varicose veins. Varicose veins are common with the Patkai Hills Nagas also but appear on men who wear no leg rings as well as those who do.

On the northwestern slope of the mountains, only a few miles distant, ornaments worn by the Namdam Nagas are more varied and gaudy. Splinters of bone, a foot long, are skewered though a knot of hair at the back of the head; thick ivory armlets are worn above the elbow. I saw one young man with an earplug through the lobe of each ear. The plugs were black cylinders about two inches long by one inch diameter. Downy, grey feathers were stuck in one end of each plug (the end worn to the front), to make a small plume about four inches in diameter. The Nagas of the Assam side of the hills have a distinctly different dress from those of the Burma side. Ornaments are more commonly worn and are more varied in character; men wear a breech clout rather than a longyi; and both sexes wear fewer clothes.

Women. As with the men, women wear few and simple ornaments. The only outstanding article of jewelry commonly seen is the amber earplug.

Perhaps the most cherished possessions of a Naga woman are her amber ear plugs. There is never so violent a shaking of the head as when a proposal to purchase a plug is made. They are long, four to five inches, and an inch to an inch and a half in diameter. The pointed end is worn to the front. A pair of these plugs is said to cost Rs 1000 or about $300.00. Amber is obtained from the deposits in the Irrawaddy River valley.

Black cylinders, an inch in diameter and two inches long, are worn as often as amber plugs. I have been unable to inspect these closely but believe them to be of stone.

I have seen one woman with a pair of silver tubes (one by two inches) used

7 *The Angami Nagas*, p. 24.

as ear plugs. Within the tubes she had wedged circular pieces of a light pink stone.

Occasionally an earring similar to that worn by men, or a silver ring with a quarter rupee pendant, is worn, but earrings are seldom worn by women.

Necklaces of string or, rarely, of silver chain, are hung with beads, perforated coins, brass keys, and sometimes one or two tubes of ivory, one-half to one and a half inches long. The beads may be of orange stone, glass, or tubular amber an inch long. There is no attempt to make a symmetrical string; apparently beads are added to the string as they are acquired.

Rings similar to those worn by men are used also by the women. A woman sometimes wears three or four rings, but as a rule, only one.

Children. Children seldom wear ornaments other than a necklace with a half dozen or so beads and coins strung to it.

Children's ears are pierced for earrings and plugs at an early age. A boy, at most a year old, has pierced ears; the hole is kept open with a short piece of twine. Girls, four to five years old, also have pierced ears but the lobes are not stretched enough to hold plugs.

SPINNING AND WEAVING

No cotton is raised in the Langsing district. Large quantities of cotton are cleaned and sold in both the Ledo and Margherita (Assam) bazaars, and I have seen Nagas buying it at the stalls. I believe that all the cotton in this section of the Patkai Hills is obtained from the bazaars.

I have seldom seen women more embarrassed than the Naga women when I showed an interest in weaving and spinning. It just is not seemly for a man to wish to know such things, and work would stop immediately. The only woman who was at all sympathetic was a Kachin girl who lived with a Naga family near Big Pani. She not only was willing to sell some of her tools but demonstrated their use. Her spinning tools were the same as those used by Naga women but she used a fixed, upright loom rather than a belt loom, which the Naga women use.

Although men make the tools used in spinning and weaving, the women own them, and men indicate that it is entirely up to the women to dispose of them if they wish.

Spinning. Cotton is purchased cleaned and carded, ready to be spun. The spindle is a slender stick, a foot long, with a flat wooden whorl. The spindle is twirled against the thigh while the thread is drawn out with the left hand.

Dyeing. When the thread has been spun, it is wound on a dyeing frame.

This is a large rack with a set of revolving arms. I have never seen the thread dyed although I have seen much of it drying after being colored. Apparently the hank of thread is removed from the rack and dipped in the dye; then hung in the sun to dry. Colors are red, black, yellow, purple, green, brown, and blue.

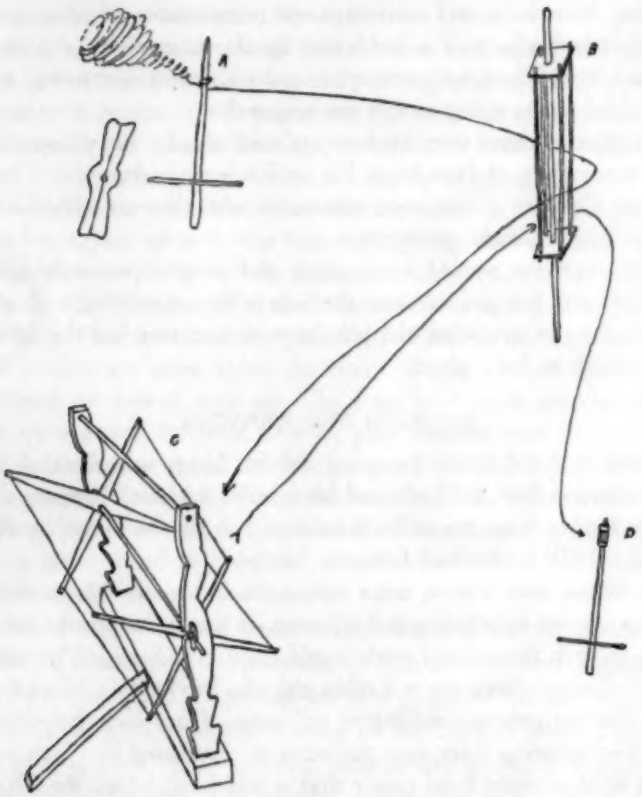


FIG. 6. Steps taken to prepare thread for weaving: A, Cotton spun on spindle; B, Thread then wrapped on long box-shaped (smaller) frame; C, Hanks of thread from B are dyed; then spun on large rack to dry; D, Thread again wrapped on B; then small quantities of thread wrapped on bobbins which fit over top of spindle.

After being dried, the hank is replaced on the rack; then re-wound on a smaller frame. This smaller frame is made of a long, slender stick on which is hung a frame of two square wooden plates joined by four sticks which pierce the corners of the plates (Fig. 6). The central stick is tapered so that the frame can be

locked in position while the thread is being wound. The large dyeing frame is allowed to revolve while power is applied by twirling the smaller frame. The small frame is then turned upside down and the sliding part released so that it can turn on its axis. The original spindle is then brought into play again. A small bamboo bobbin is slipped on the tapered upper end of the spindle and a small quantity of thread wrapped on the bobbin by spinning the spindle. A number of bobbins are wrapped at the same time, then put away in a basket until they are to be used.

Threads of various sizes are made. The threads used in making a man's longyi or turban cloth are comparable to our commercial size 40. Threads for women's longyis are a little heavier, and for blankets and bags the thread is about the size of that used in making hessian cloth.

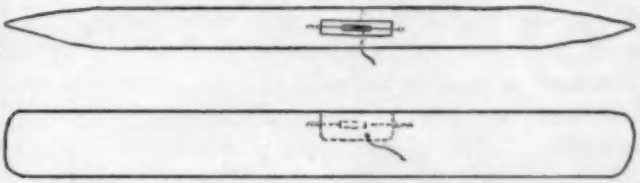


Fig. 7. Plan of Langsing shuttle (length, 20 inches).

The Loom. The loom is a belt loom of single heddle tension type which will accommodate a piece of cloth fifteen to eighteen inches wide. In contrast to looms in the Naga Hills, where the belts (which pass behind the weaver's back) are woven of cane, Langsing belts are of leather; otherwise the looms seem to be identical.

The shuttle (also used as a beater) is a boat-shaped tool, twenty-four inches long, with a receptacle for the bobbin at the center. The bobbin is held loosely in place with a slender twig or strip of cane. A hole is drilled through the side of the shuttle on each side of the bobbin for the thread to pass through (Fig. 7).

CEREMONIES AND CEREMONIAL DRESS

I saw no Naga ceremonies: I was invited to a feast and dance at the end of the rice harvest (in early October) but was unable to attend. As near as I could determine, the harvest festival was to begin with a big feast early in the day and would continue into the night with dancing. During the winter months I saw, on four or five occasions, huge fires burning at Loglai Shim and heard later that there had been feasts at those times. Apparently there were no ceremonies during the monsoon season.

Whether the Langsing wear the elaborate ceremonial costumes of other Naga groups I do not know, but the basket hat, or helmet, is identical with that worn in other districts. The hat is conical, of plaited cane and lacquered red. A few simple designs in yellow paint decorate the hat. Four large boar tusks hang from its rim and a tail feather from a Great Hornbill *(Dichoceros* sp.) is tied to the back so that it stands erect. Both hats I saw were similar except that one had a foot-long braid of human hair hanging from the back of the hat, in addition to the hornbill feather.

BASKETRY

All Langsing baskets are made by plaiting. The material used in some coarsely made containers, such as gathering and storage baskets, is bamboo, but finer specimens are made with withes of split cane of finer texture than bamboo. Supplies of splints are kept in the house at all times and baskets are made as they are needed. All basket making is done by the men.

Since no pottery is made in the district, and wooden containers are rare, baskets are made in many forms to serve purposes which range from gathering food to brewing beer. Individual design is rare: baskets vary little in pattern and may easily be classified according to use (Plate 2).

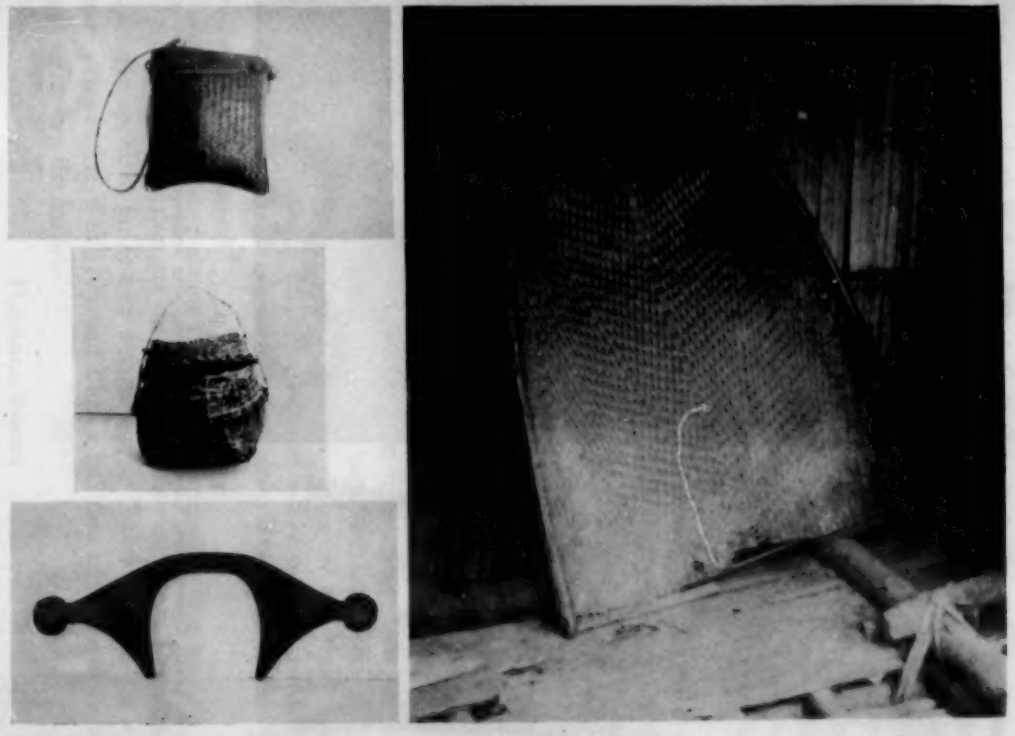
Burden Baskets

Four types of burden baskets are made. Of the three varieties made to be carried on the back or at the side, one is carried only by women, one by both sexes, and one by men. The fourth, for carrying birds or animals, is borne in the hand.

Woman's burden basket. The basket carried by women has a square bottom, straight flaring sides which are forced to a rude circle at the top, and is carried by a tump line which is attached to the basket.

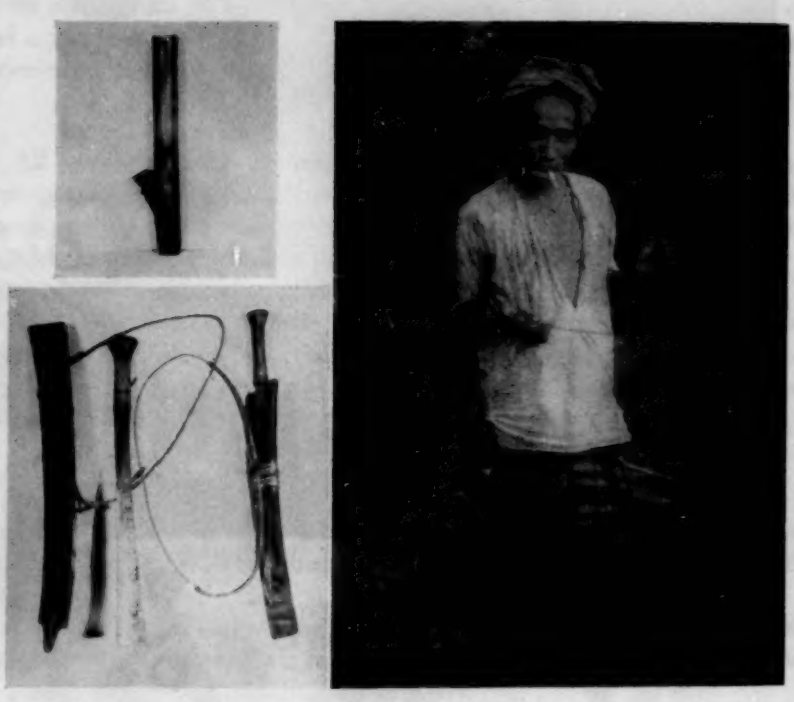
The base of the basket is a square (about four to five inches) of wood. It is made by creasing and bending a strip of wood, two to three inches wide and a quarter inch thick, into the square; it is lashed into shape with a strip of cane. The base of the basket is tied to the square with other strips or a cord. Holes are punched in the wood to accommodate the ties. The chief purpose of this base seems to be to keep the basket and its contents dry when stops are made on the trail and the loads taken from the backs for a rest.

The base of the basket is plaited flat, then turned up to form the sides. The sides are reinforced with seven slender rods of wood, and an eighth rod is tied as a hoop to strengthen the top of the basket. The tump line consists of a heavy



BASKETS, BASKET YOKE, AND TRAY

UPPER LEFT: Man's small purse-type basket; LEFT CENTER: Small household basket with lid; LOWER LEFT: Yoke for tump line of burden basket; RIGHT: Winnowing tray.



KNIVES, PIPE, AND FIDDLE

UPPER LEFT: Opium pipe; LOWER LEFT: Knives, with scabbards; RIGHT: Manner of playing the fiddle.

cord, usually four-ply, with knotted ends. A flat plaited band is woven for the headband; the ends of this are formed into a tube woven over the knots. The tump line is attached to the basket by small loops of cord which are tied to the vertical supports of the basket. When the load in the basket is heavy, a wooden yoke is used to take some of the weight from the head.

Oval burden baskets. These have concave bottoms, reinforced with a strip of cane. The cane is carried up the edges of the basket and tied at intervals to the plaiting. Another strip runs up the back of the basket from the base to top.

The tump line is tied to the reinforcing strips at the sides of the basket, and two cords at the top serve to tie the load in place. When women utilize this type of basket—which is seldom—it is carried on the back with the tump line over the forehead. Men occasionally carry it in this manner, but more often sling it over a shoulder and carry the basket at the side.

"Purse-type" basket. These are small baskets carried by men. As a rule a man will carry no greater load than can be stuffed into one of these small containers; they measure about nine by eight inches with a three inch wide opening at the top.

They are similar in shape and design to the oval burden baskets. The principal difference between the two is that the smaller baskets lack the additional reinforcing strip on the back side. Often a pair of cords is fastened to the top for a tie, and a few men weave a cover which slides on the tump line and can be tied down over the mouth of the basket.

Baskets for carrying animals. Small baskets for carrying birds and animals are woven with an open mesh and tied at the top. These are made to accommodate a particular load and a Naga will weave one in five minutes or less. The baskets vary in size and shape according to what will be carried. If one chicken is to be carried the basket is made to fit that chicken; if two chickens, the basket is lengthened.

These baskets are used almost entirely for transporting live animals. Fowl, small pigs, and barking deer are the loads most commonly seen. One day, however, a Naga appeared at my tent with an egg as "bakshish"; the egg was enclosed in a tiny basket of this type and I had a bad time of it to remove the egg without destroying the basket.

Household Baskets

Storage baskets. Storage baskets are actually large cylinders of plaited bamboo. Bamboo stalks are crushed with clubs until they are flattened. The flattened material is then woven into cylinders three to five feet in diameter and two to

two and a half feet high. These are placed on mats, either in storage houses or in the rear of the dwelling, and used for storing rice.

Trophy baskets. Trophy baskets are similar to the purse-type basket carried by men. Some have covers but most are closed with a piece of cord. The baskets seem to be made to enclose a particular skull, or piece of skull, and are hung from roof poles.

Household baskets. Many baskets are used around the house for holding small objects. A weaver will have one or more for threaded bobbins and other odds and ends. Some hold herbs, and individuals keep small personal belongings in baskets which are stuck into corners or other out-of-the-way places.

Most of these baskets are round, have lids separate from the body of the baskets, and many have red lacquered wooden handles. There is more individuality displayed in the manufacture of this type of basket than in any other object of Naga craft. The baskets tend to be round and bowl shaped; the maximum diameter is from eight to fifteen inches. A flaring base is common and lids are made which rise to a point which is surmounted by a piece of carved wood, painted red. A few, used by weavers, are oval and topless.

Winnowing trays. Winnowing trays are uniform in size and shape (Plate 3). They are semi-elliptical, three feet long by two feet across the broad end. The broad end is flat, but the sides are gradually raised so that the apex of the tray is three to four inches deep.

Matting. Floor mats are of any size up to eight feet square (the largest I saw). As a rule they are rectangular and about three by five feet. They are sometimes spread on the floor in the daytime but their principal purpose is as sleeping mats. They are also used on the sun platform for drying tobacco, herbs, seeds, etc.

Gummed water baskets. Tall bottle-shaped, gummed baskets are sometimes used for water instead of the chunga (bamboo water container). One or two of the baskets, which hold from two to three quarts, stand in the corner of the room with the chungas. Families working in fields will carry water in one of these baskets unless there is a stream very close to the field.

A large size basket, which holds from three to five gallons, is made and used for brewing rice beer.

The basket is a double one; that is, two separate pieces of weaving are involved in order to make one. The inner basket is in plain plaiting, woven to the size and shape desired. This is then coated, inside and out, with gum. The outer reinforcement is then woven over the inner basket. This consists of a set of vertical cane strips, a quarter inch apart, which are bound and strengthened by

bands of plaiting. The entire bottle is then gummed once more. A section of bamboo is used as a stopper. I have seen a few of these bottles with tump lines attached, but that is not the rule.

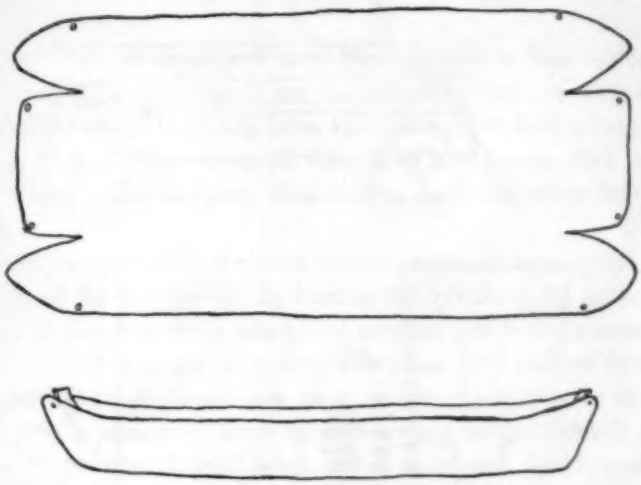


Fig. 8. Plan of banana leaf tray.

Gathering Baskets. When women go into the jungle to gather uncultivated plant foods they usually take a simple conical basket made of bamboo. A section of bamboo, two feet long, is slashed from one end to a point several inches from the other end. The slashes make 10 to 15 strips which are forced out and held in position by a crude plaiting with other strips of bamboo. The bottom of the basket is cut to an edge so that the basket can be forced into the ground and will remain upright while it is being filled.

Banana leaf containers. Thick sections of banana leaf (Fig. 8) are cut, bent, and tied to make small containers for weaving materials or personal belongings. These are sixteen to twenty inches long, five to eight wide, and two deep.

WOOD AND BAMBOO

Little use is made of wood. The more important uses of this material are:

Weapons. Crossbow stocks, spear shafts, and knife handles.

Pillows. Billets of wood, three by six by twelve inches, are used as pillows and sometimes used as a sort of low backrest when a person sits or squats (Fig. 9).

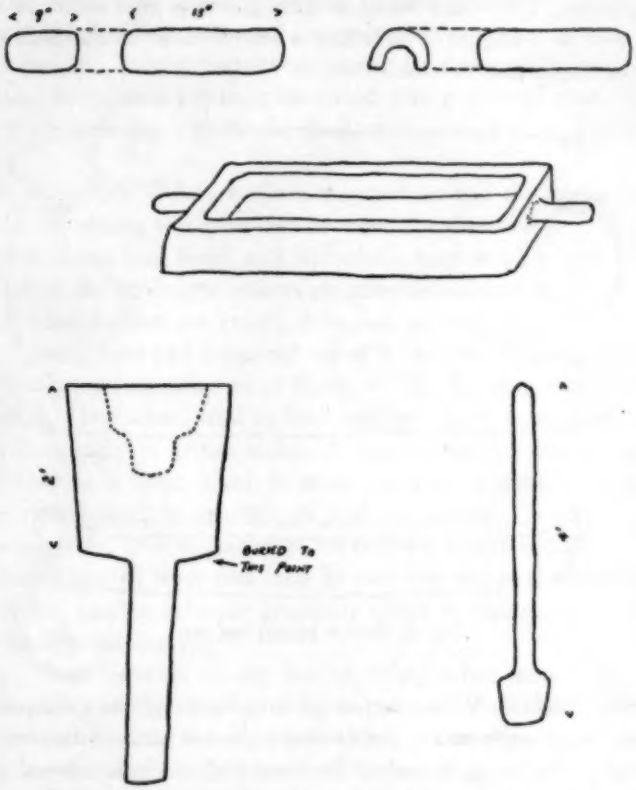


FIG. 9. Wooden objects: pillow, trough for feeding swine, mortar and pestle for hulling rice.

Posts, stringers and rafters for houses.

Troughs for feeding stock (chiefly swine).

Mortars and pestles for hulling rice.

Yokes for burden baskets. The yokes (Plate 3) are used when a heavy load is carried in a burden basket. The yoke is used in addition to the tump line and by grasping the yoke with both hands the Nagas take some of the weight from the head.

Bamboo is used for almost every conceivable purpose. Bamboo is strong, flexible, easily worked, and can be sharpened to a fine point. It is natural that

people living in a country with an abundance of this plant should use it to such an extent that other common, but harder to work, materials are almost excluded from their economy. In addition to such tools, weapons, and containers as have been described in other sections of this paper are the following household utensils:

Chungas. These are sections of large bamboo, three to four feet long by six inches in diameter. The bamboo is cut just below one node, to form a base for the tube, and the second cut made below the next node to form a long tube with a good stout bottom. The women fill these tubes at a stream, then pack six to eight in a burden basket and carry them back to the house, where they are stood in a corner.

Cups. Cups are made in the same manner as the chungas except that only small lengths of the internode of the bamboo are left above the node. The cups vary greatly in size, from those which hold no more than a few ounces of liquid to some which hold a couple of quarts. Many are used without further work but some, particularly the larger ones, have handles of braided cane strips.

Bottles. Short sections of large bamboo are cut so that there is a node at each end of the cylinder. A small hole is drilled at one end, liquid poured in, and the hole plugged with a twist of grass or piece of cloth. Bottles of this sort were used for peddling rice beer.

Household tools. Tweezers, fire tongs, cooking and storage utensils, nearly any small tool or piece of equipment needed by the Naga is made of bamboo. Rice and tea are both boiled in bamboo tubes. The tubes are placed directly on the coals of the hearth.

MUSICAL INSTRUMENTS

A small drum is kept at nearly every house and a small two-stringed fiddle is common. These, with the jew's harps owned by the boys, are the only musical instruments I saw in the vicinity of Loglai. The drum and fiddle are of the same type as those played by beggars in the bazaars of Assam and Bengal; I do not know whether the drums are made by the Nagas or obtained by trade; the fiddles are made by the men.

Drums. Drums are made of cylinders of wood, fifteen inches in height by seven to nine in diameter. A drum head is stretched at each end by a lashing which is tightened by rings of cord. To beat the drum a Naga holds it in his lap and strikes with the finger tips of both hands.

I saw none of the large ceremonial log drums made by the Aos, Sangtam, and some of the Konyak tribes.[8]

Fiddle. This instrument is made with a narrow necked gourd for a body, a one and a half foot length of slender bamboo, and two strings of either gut or fiber (Plate 4). The gourd top is cut off and covered with a thin slab of wood; the bamboo neck is passed through two holes near the top of the gourd. The strings are attached to the lower end of the bamboo, which projects beyond the gourd, passes over the edge of the gourd and over the bridge, which is a strip of wood fastened vertically to the upper edge of the sounding board. From there the strings run along the bamboo neck and are passed through a notch and tied to the ends of wooden pegs which are used for tightening the strings.

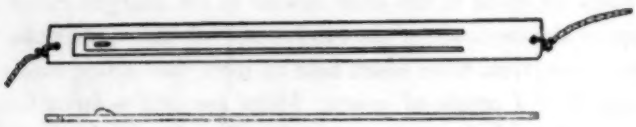


FIG. 10. Jew's harp (4½ inches long).

The bow is a strip of bamboo with a cord bowstring. The string is no more than a foot long.

Jew's Harp. The jew's harp is made of a thin, flat piece of bamboo, about a half inch wide by four or five inches long (Fig. 10). A U-shaped cut is made through the bamboo so that a long sliver, attached at one end, extends almost the entire length of the instrument. Near the free end of the sliver a tiny piece of gum is stuck to make a fin-like projection. A small hole is bored through the bamboo near each end. A piece of fine cord is tied through each hole, the jew's harp placed over the open mouth (with the fin out), and a noise is made by jerking the string at one end while the other is used to hold the instrument in place.

Many boys attach a slender tube of cane to one of the strings to form a case which can be slipped over the jew's harp. One large specimen I was able to buy has two tongues of equal size. Hutton[9] says that this instrument is played by Angami women, but among the Langsing only boys, and an occasional young man, use it.

8 James Philip Mills, *The Lhota Nagas* (London, 1922), p. xxviii, and Christoph von Fürer-Haimendorf, *Through the Unexplored Mountains of the Assam-Burma Border* (Geographical Journal, vol. 91, pp. 201-219, 1938), p. 215.

9 *The Angami Nagas,* p. 69.

OPIUM CULTIVATION AND SMOKING

Opium poppies are grown in small fenced enclosures near the houses. Not every householder has an opium patch: only about half the men grow poppies, though some have two or three enclosures. The enclosures tend to be round, fifteen to thirty feet in diameter. The fence is a row of bamboo palings loosely lashed together with rattan strips. An opening in the fence is closed by a removable gate. The poppies are planted after the close of the southwest monsoon and mature in March and early April. After the sap has been gathered the pods are allowed to dry on the plant, then are hung in the houses to keep the seed.

Just before the sap begins to dry, ten or twelve vertical slashes are made on the pod and the sap is gathered on small strips of cloth. As the drug-bearing sap dries the cloth is coated with a yellow, waxy gum. Impregnated cloths may be kept indefinitely.

In preparation to smoke, a Naga cuts a piece of cloth, about two square inches, places it in a small brass ladle, adds a little water and heats it over the fire. As the water heats, the opium dissolves. A pair of bamboo splinters is used to press all the gum from the cloth; the latter is then discarded. After the cloth has been removed the liquid in the ladle is allowed to simmer until it is the consistency of thick molasses. When it has reached this stage, it is poured into a bamboo tube and a fresh batch prepared. New opium is added until sufficient for the projected day's smoking is ready.

While this has been going on, another man shreds dried banana leaves. Only small tender leaves are used. When the leaves are shredded, small balls (three-quarter inch in diameter) are rolled and these are dipped into the opium which by this time is quite thick and stiff. The opium is now ready to be smoked.

The pipe (Plate 4) is cleaned by running a slender sliver of bamboo down the bowl to clear the smoke channel. The water level is then checked: the water should be just below the base of the bowl. A pellet of opium is then placed in the bowl and a coal from the fireplace put on top. As the smoking goes on, the bamboo sliver is used to keep the smoke channel clear; all the heel or dottle is pushed down into the water. Coals are replenished as each loses heat.

Although the men smoke often, and for several hours at a time, I have seen no evidence that they smoke to excess nor is there anything in their actions while preparing the smoke to indicate that they are in crying need of dope. Opium smoking is a social custom; two or more men will sit around a fire and smoke and talk all afternoon. The only noticeable effect is that they become glassy-eyed. They remain friendly and cordial.

While smoking, bamboo tubes of tea are kept simmering in the fireplace, the smoker taking a sip of tea at frequent intervals.

I saw an old man, who complained of feeling sick at the stomach, pour the water from two opium pipes into a brass ladle, warm the liquid, then drink it. Afterwards he smoked a pipe or two. He did not gag when drinking the stuff but washed his mouth with water afterwards. The water in an opium pipe is brown and has a very bad smell—I should say that it is probably a powerful narcotic. This custom of drinking the liquid from a water pipe is the same as practiced by the Angami and Sema, except that the latter smoke only tobacco, no opium. An Angami claims that a man has to smoke almost constantly for at least a year before he can drink the water—only the most hardened smokers do so.[10]

The same man who drank the water shredded corn husk for rolling the opium pellets. Apparently there is no rigid custom for preparing the smoke: any material which will shred easily and burn might be used. I believe that much of the smoking is done to kill pain, particularly by the women who smoke. All the women smokers I have seen have been elderly or ill; also, although everyone, from small children up, smokes cigarettes, opium smoking becomes more general with age. Judging by Naga food, which is cooked with an abundance of peppers, I should guess that most adults have stomach disorders; certainly most of those who are ill complain of pains in the abdomen.

NEGATIVE CHARACTERISTICS

Following are some traits which the Langsing do not share with their neighbors, either other Naga groups or the Singpho (Kachin).

No pottery is made or used. This is strange, for a great deal of pottery is made on either side of the mountains and there are good deposits of fire clay along the banks of the Loglai Hka.

Stone is not used for any purpose other than for sharpening knives and for hearth stones. There is no betel chewing; no taro is grown; there are no poisoned arrows. The use of poisoned arrows is a rare trait among Nagas. No tattooing or body painting is practiced; there are no morungs, nor carved house posts, nor megaliths or sacrificial posts, nor great drums, nor fortified villages.

A GLOSSARY OF A FEW LANGSING WORDS AND PHRASES

Men from the same village will often pronounce the same word differently. I have had two men give me a Naga word almost simultaneously and have received different pronunciations. When asked to repeat, each continued with the

10 Hutton, *The Sema Nagas*, p. 100; *The Angami Nagas*, p. 101.

pronunciation he had first given. The sounds r and l are interchangeable; a word will sometimes be given with an l sound, at others with an r.

In the list below, where no accent is indicated, the syllables are of about equal strength, with a slight stress on the final syllable. Sounds in italics are weak and barely pronounced.

nose – k'ian
mouth – n'ym bia′
tooth – vi
cheek – tæ
ear – ni
hair – k'ow
finger – ja sha′
hand – ja pi′
arm – ja pom′
fingernail – ja san′ (or sha)
beard – gu (very hard g)
chest hair – ko bi′e
leg – huk
foot - ji pi′
toe – ji sha′
ear ring – ni tu′
breast – ne pi an′
eye – ma
eyebrow – ma kam′
pipe – nuo tuk′
cotton bag – te kia′
knife – ja
scabbard for knife – ja hi
longyi – te na*t*
ring – dia dhut
necklace – lak
neck yoke – cü cü′
opium – ka ni
opium pipe – to pa′
tobacco – yu sha*p*′
rice – rh'en
house – hu*k*
cross bow – di*t*
bow string – di*t* pa
spear – bu'*t*
shirt – bon jang or tsa heng
fire – ve
sugar cane – kai tu′
rifle – o ni
bullet – *ch*an tai′
turban – ka pi′*uh*
maize – bian′ hu*ng* ro′
corn cob – bege ro′
shredded banana leaf for opium pipe – pin ja′
liquid in opium pipe – hi ta′
iron pot – ta*k*
gummed basket – pan kow (also given as ta bum)
burden basket – hui (also ko ro*n*)
small basket carried by men – ke pi′
storage house – ya′*m*
tea – ch' aa
drum – ba ya
woman – ya chuk′
man – ma*t* vi′
stone – wi pe
pellet bow – ka li′li
antler – cha grë*n*
leg rings – i pa
hashish – pa*ng*
rice beer – chora
cigarette – ne shep
rain hat – fo mai

pig – va
boar tusk – va vi
mithan – nii
chicken – gow
goat – kai ku′
door – ki lya′*n*
good – a hie′
no good – a ba
eat – ts a*m*
I know – ti tiken′ wa
I don't know – he mo
go away – ki la′
come here – va ra
1 – shi
2 – *ha* nai
3 – th um
4 – ba lai′
5 – bungai
6 – throt
7 – me shai
8 – de cha*t*
9 – da kow
10 – ro shi
11 – ro shi ro shi
12 – ro shi *ha* nai
20 – ru nai
30 – ru thum
40 – ru ba lai′
100 – shi shai

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Santa Fe, New Mexico

A STATUS SYMBOL AND PERSONALITY AT TAOS PUEBLO

GEORGE L. TRAGER

E. C. PARSONS has recorded[1] that at Taos Pueblo men wear their hair in two braids hanging forward over their shoulders, and that men's hair is not cut; boys whose hair is cut at school start regrowing it as soon as possible; the few rebels against long hair give up under pressure after a while. The observations were made in the '20s and '30s, but any visitor to the Pueblo since then would still agree that relatively few young men are seen with short hair.

My first visit to Taos was in 1935. As acquaintance with individuals grew, the first impression was confirmed that only the schoolboys wore their hair short. During the winter (1935-36) very few males—except for pre-adolescents—were seen with short hair, but during school vacation periods a good many adolescents with short hair were noticed. It was not until after some months of work at Taos that I met the one adult man who consistently refused to grow his hair. This man is the one referred to in my grammar[2] as informant "B." The other two men with whom I worked ("A," "C") wore their hair in the regulation braids.

The occasional contacts with my informants, and with visitors to Taos, that I had from 1937 to 1947 indicated that no change in male hairdress had taken place.

In 1947 I came back to Taos for a session of field work.[3] "B" was still wearing short hair (and also—as always—shoes, a hat, and no blanket; moccasins, hatlessness, blankets being all symbols associated with long hair as indications of status as an Indian), and "A" and "C" had both had their hair cut in the armed forces. "A" and "C" were regrowing theirs. "C" however had preserved his cut-off braids and, fastening them with a string, he would put them over his head so they hung in their usual position on each side; then he would wear a hat—a most un-Taos-like action—to cover up the device. There were also a great many men—not old but quite clearly over school age—about the Pueblo who wore their hair short. Many of these were employed in Taos village, but some were not working outside Taos Pueblo. It was evident that the reaction to the enforced

1 *Taos Pueblo* (General Series in Anthropology, no. 2, 1936), p. 26.

2 *An Outline of Taos Grammar* (Viking Fund Publications in Anthropology, no. 6, pp. 184-222, 1946), p. 186.

3 Aided by a grant from the American Philosophical Society, for which thanks are hereby expressed.

cutting of the hair in the armed forces was not the same as to that formerly affecting only schoolboys. The short-haired ones now were, at least in part, men who had been full ceremonial participants at the Pueblo, and who were continuing or were at least eligible to continue their participation, but who, for one reason or another, chose to retain short hair.

It seemed in point to look into the matter to some extent. I had learned long ago, of course, that any questions asked other than for linguistic information were likely to get partial answers. But inquiries on this subject were surprisingly successful. "A" told me that when he first got out of the navy he went to work in Taos village and decided to keep his hair short. But then he wanted to get back into the feel of things as a full participant, and let his hair grow. At the time we talked about it (June, 1947), his hair had reached about halfway down his neck, with no sign of braids as yet. The following September, on a short visit to Taos, I found "A" running a stand in the village, and his hair had been cut again. This time he told me, in so many words, that he was going to keep his hair short, and be a "regular business man." On my last visit (March, 1948), "A" was still cutting his hair, and was wearing rather well selected—though very colorful—jacket and trousers, without a blanket, though he was no longer a "business man" but was working in a laundry.

With "B" I discussed the matter of long hair during the June, 1947 visit. He was of the opinion that many of the returned service men had simply decided to keep their hair short for convenience, and because they could command better jobs than could long-haired and presumably unsophisticated Indians.

At this time, as stated, "C" had a device to give himself the appearance of having braids. When I talked to him about it he laughed self-consciously and said he would tell me, in Taos text, how it all happened. He then started to give me an autobiographical account of his army experiences and their aftermath. The text was recorded in several sessions; it amounts to about 1800 Taos phrases,[4] which would be at least twice as many English words (these figures are not to be taken as statistics but as rough approximations). The style is in "C"'s usual manner of dictating: relatively short utterances, with a simple sequence of narration, so that few complex syntactic devices are needed. It is a bare style—no embellishments, very little attempt at artistry. There are indications that "C" could be much more esthetically effective if he chose, but he watches as I write things down, and tries to adjust to my speed; often he simplifies a statement on repetition, if I failed to get it down. On such occasions it is

4 For the technical definition of a phrase see my *Taos I: a Language Revisited* (International Journal of American Linguistics, vol. 14, 1948), § 2.1, p. 156.

sometimes possible to get him to restore the original fullness on further repetition, but not always. I hope to be able to present the whole of this text, with full linguistic discussion, translation, and socio-anthropological commentary, in another place and at a later date. Here there will be given, in free translation, only the beginning of it, up to the point pertinent to our present subject:

In this second world war I was called up by President Roosevelt on October 30, 1942. They took me to Santa Fe for a physical examination. When we came to Santa Fe they took us to a house: it was army headquarters. There were tables there and men sitting around. Then they lined us up, calling our names. And then they took us in to the doctors. When my name was called I went in, and I took my clothes off, to see the doctor.

Then they gave me the paper with my name on it, and the officer took that paper. And again they lined us up, and they gave us papers as we passed by. And the captain told us to raise our right hands, and swear that we were appointed soldiers and to serve our country. So that we can fight for our good country in this war against those yellow people and Germans. Then they brought us back home and set the day when they would take us.

And then when it was November 12, I was very much depressed, thinking over my past life, and my mother also cried every day. I didn't think I would come back again. It was very bad, this army-taking, when it was happening. Then when it was the 12th, they took me way down south to Fort Bliss. And there I stayed one week. And then my officer took me to the barber shop and there they cut my braids. And then I felt as if my scalp was taken off; when they cut, my heart felt hurt. That man wanted to buy my braids for one dollar, but I didn't give them to him. . . .

The text then goes on to relate subsequent events, and does not mention the braids again. "C" told me, however, that he preserved them carefully, and when he was released from the army he fixed them up so he could wear them at the Pueblo and generally around Taos. When he would go away—to California once, or even just to Santa Fe—he would leave the braids off; he also left them off when working in the fields or getting his horses or the like. In passing it may be mentioned that "C" learned to wear a hat many years ago (at school ?), and nearly always wore one when there was much strong sun and he was working outside, or when it was raining; in 1937 I once asked him about it, and he explained that while he knew it was not proper for a Taos man to wear a hat, he got away with it because he did it only occasionally. In 1947 his hat-wearing was more than occasional; but many of the short-haired men were wearing caps, especially when at work.

By March, 1948, "C" 's hair had grown sufficiently for him to braid it. The braids were short—only a few inches below the shoulders—but he was inordinately proud of them as being his own, living, growing hair. In the one session

of work we had on this occasion, "C" discussed the matter with me. He said first that long hair was considered a necessary concomitant of participation by a Taos man in ceremonial. When one's hair was cut at school or in the army, one should let it grow again as soon as possible. The men who were now refusing to let their hair grow were having pressure applied to them. At every council meeting, the "head men" (governor, war captains ?) brought up the matter and discussed it. The heads of the kiva groups (Taos Indians now use the word kiva in English, though they also still speak of the groups as "clans") insist that long hair is the badge of an Indian (male, that is—women at Taos have little ceremonial standing). Cutting one's hair is taken as a mark of loss of ceremonial fitness, a loss or at least diminution of one's Indianness (wearing the blanket was the same kind of symbol as long hair, said "C").

At this point I ventured to ask whether—since "C" wore shoes, was thinking of marrying a non-Taos girl, and in many other ways deviated from the typical Taos pattern—he agreed with these opinions. He said he did, and then went on to say that anyway, even if it was not really as the elders said, he had personal feelings about the matter. He stated, "I didn't know I was an Indian when my hair was short." He felt "cold" (cf. the remark in the text above about being scalped—on recording that sentence I also wrote down "C" 's English free translation "I felt like I been scalped"); it was uncomfortable. He looked just like everyone else and did not feel right; when he went to California no one took him for an Indian. When he got back to Taos his mother (now dead) urged him to grow his hair. The council threatened him with fines, or he was cajoled, or sarcastic remarks were made at his expense. So finally he got tired of resisting and gave in to his "real feelings," and let his hair grow. Now that it was grown, he felt right again. And he added that the headmen say, "Even if you dress like a white man, cut your hair, and so on, you're still an Indian in your flesh and skin, so you should always let your hair grow."

Long hair worn by a man in two braids is then, at Taos, one of the principal external, material symbols of status as an Indian. It is so recognized by non-Indians: of short-haired Taos men it is said by both English-speaking and Spanish-speaking whites ("Anglos" and "Mexicans" in local terminology) that you cannot tell they're Indians, especially if the blanket or sheet is wrapped inconspicuously into a thin sash-like arrangement around the waist. They then "look like Mexicans," and this is likely to be resented, or at least looked upon with disfavor, especially by the Mexicans. The Indians themselves generally react to such remarks by agreeing heartily that they would indeed look like Mexicans,

and pointing out that that would be the last thing they would want to be mistaken for!

Whatever may be the exact history of the Taos style of wearing the hair, it is clear that it has come to be consciously and specifically set up as the status symbol it now is. With the generally increasing rate of acculturation in material things, this particular behavior-trait must necessarily act as a stimulus to overt manifestations of differently-conditioned personality responses. In the present discussion we have seen three such sets of responses.

In "B" 's case we have the behavior of a personality that is consciously breaking with a whole set of old cultural patterns, and that is so well integrated in its pattern of revolt that it accurately selects precisely the most noticeable symbols of the old patterns as those it openly and consistently rejects. This type—the philosophically-integrated consistently radical assimilationist, we might call it—is very rare at Taos. "B" is not the only representative of it, I am sure, but at the present time he is the most consistent and conspicuous.

"A" is a person who is often uncomfortable with the old patterns, but who has never explicitly figured out just what he wants to do. He wavers from one extreme to the other. Social pressure affects him greatly. At the beginning of our association he was an eager informant, but when he was warned away[5] he became thoroughly frightened, and has never openly worked with me since, though our relations have been very friendly and he has given me much incidental information in conversation. He has often said that he would like to throw off the yoke of what he calls "the old men." Years ago, when he was at school, he had his first opportunity to do so; his willingness to work with me was a carry-over from that period. Then came pressure from the Taos cultural milieu, especially strong after some early marital difficulties had come up. He became very seriously "Indian," and stayed that way for a few years. The war, and service in the navy, presented a new opportunity to rebel. When he returned he wavered back and forth for several years. Now he seems to have settled into a kind of semi-permanent half-way stage between a good Taos Indian and an acculturating economically lower-class New Mexican. This is a non-integrated personality type, inconsistent and even contradictory in its behavior patterns. It is a personality that does not fit well into our usual picture of a Pueblo Indian. There is too much violent reaction to things that are disturbing to it, and too little acquiescence in what are supposed to be culturally accepted patterns. (Of course, it has long been evident that one thing that distinguishes Taos from

5 *An Outline of Taos Grammar*, pp. 185-186.

other Pueblo groups is the recurrence of violence in many sets of behavior patterns.) "A" is hardly different in his wavering reactions to such an external symbol as long hair from the multitudes in Western culture who accept fashions —in dress or politics or sex mores—with constant grumbling and with resulting aggressive counter-action from time to time. We might label "A" and those like him the unwilling and unhappily acculturating group; their number is growing at Taos Pueblo.

When we come to "C" we find again a rather well-integrated personality. This man too has been subject to conflicting stimuli, and has had wavering reactions at times. But the basic cultural pattern of Taos has remained with him: he is still a Pueblo Indian, and consciously so; he is proud of belonging to the special group and is willing and anxious to display the external symbols of it. He has worked out for himself a situation where he maintains his standing in the culture by external symbols and other devices (a full personality study would be needed to bring out the latter), and while allowing himself many deviations from the typical old-fashioned Taos pattern, nonetheless remains in his own eyes, if not always in those of the "old men," a good Taos Indian. "C" 's behavior is that of the gradualist in acculturation; he is unusually explicit and intelligent about it, but among persons under forty-five at Taos this type is probably in a majority.

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THE BACAIRÍ OF NORTHERN MATTO GROSSO

KALERVO OBERG

ACCORDING TO ESTIMATES made in 1947 by the Brazilian Indian Service (Serviço de Proteção aos Indios) there are between 200 and 250 Bacairí living in northern Matto Grosso State, Brazil, divided between the Indian Post of Simão Lopes on the Rio Paranatinga and the village of Rio Novo some distance to the northwest. The Bacairí claim that the whole tribe originally lived together on the Rio Paranatinga (headwaters of the Tapajoz River) but attacks by Indians and Brazilians forced them to move about ninety years ago. Owing to a dispute the tribe split, one group moving north to settle on the banks of the Rio Culiseu, a tributary of the Xingú River, the other moving to Rio Novo. After about fifty years in the Culiseu basin, this group moved to the present location of Simão Lopes, not far from the original Bacairí settlement on the Rio Paranatinga. Although the Rio Novo group has adopted Brazilian customs and manages without government help, some have moved to Simão Lopes where the Bacairí now live on reservation lands and receive assistance from the Brazilian government. The information presented here was obtained at Simão Lopes from the Bacairí who lived on the Rio Culiseu and relates to the life that they lived there about forty years ago.

Linguistically the Bacairí belong to the Carib-speaking family and appear to be culturally closely related to the other Carib-speaking tribes in the upper Xingú basin. The Bacairí are short in stature, broad-shouldered, and well-built. The head is broad, the nose straight or acquiline, the face narrow, the lips fairly thin. In physical appearance the Bacairí remind one of the Arawak-speaking Paressí but contrast sharply with the large-framed, dark, coarse featured Bororo, Omutina, and Guató living in the headwaters of the Paraguay River to the south.

ECONOMY

Shelter. While in the Xingú watershed the Bacairí lived in villages built on the banks of the Rio Culiseu. A village (utanári) consisted of six to twelve houses (towisę) built in a circle around a central plaza (taséra). The Bacairí house was a large communal building, oblong in shape, with rounded ends, and with the roof thatching reaching to the ground. These large dome-like buildings were occupied by three to five families.

In the center of every village there was a ceremonial or common house

(kadoéti) in which the men kept their ornaments and musical instruments and in which visitors were entertained. Men, women, and children were permitted to enter the kadoéti. Attached to the common house there was a smaller building, usually oriented in the direction of the rising sun, in which the secret flutes were kept. Women were not permitted to enter this house, as they were not allowed to see the secret flutes. The villages were connected by roads running along the river bank.

Equipment. In the center of each house there was a storage space (jiráu) where maize, manioc meal, and other foods were kept in gourd vessels (káiko). Cooking was done in a small shed at the back of the house, but food was eaten indoors. Around the walls each family had its hammocks (amáka) in which the people slept. Other furnishings of the house consisted of mats, baskets, clay pots, wooden benches, dishes, and cups made from gourds.

As the Bacairí were extensive travelers and depended upon fish for a considerable part of their food supply, canoes were an important part of their equipment. The Bacairí canoe (pépi) was made from the bark of the "jatobá" tree. The tough, heavy bark was first stripped from one-half of the tree. Small fires were then lighted on the inside of the bark trough to make it curl. Braces were placed at intervals along the entire length, the bow was tapered, and the stern was squared off by forcing the bark upwards at one end. Bacairí canoes varied in size, the larger ones being able to carry as many as eight men. Canoes of "jatobá" bark are used by the Bacairí today and are the predominant type among the Indians of the upper Xingú. The Bacairí also made large tubs out of "jatobá" bark which were used as settling vessels for manioc juice. The juice of the manioc contains a fine powder or starch which settles on the bottom of the vessel to be gathered after the liquid is poured off. For gardening the Bacairí formerly used a digging stick made of hard wood. For hunting they used a bow (túka), round or slightly oval in cross-section, from two to two and one-half meters in length, made from a yellow or reddish wood which was first matured by burying it in mud. The bow string was made from the fibres of "imbauwa" bark. Arrows (piréu) were made from cane with hard wood or bone points. Hunting arrows had two feathers, but arrows used for shooting fish had serrated wooden points and no feathers. The cutting tools of the Bacairí consisted of knives made from bamboo, stone, bone, and shell. Transportation was by canoe, or if overland, goods were carried in a wicker basket supported on the back by a tump line.

Ornaments. While living on the banks of the Culiseu River, the Bacairí, in common with the other upper Xingú River tribes, did not use clothing. Men sometimes wore a narrow cotton band (onegín) around the waist, with a few tassels

hanging in front. From the inner layer of bark, the women made a small (one and a half inch long) triangular covering (ulurí) which they wore over the pubes fastened by a string around the hips and another between the legs, generally not tied at the back. Men wore their hair cut short all around the head at a line above the brows (as though cut at the edge of a bowl). Women wore their hair long at the back but cut straight across over the forehead. Hair was cut with a knife made by setting sharp fish teeth into a wooden stick, and was combed with a comb (aekáji) made by weaving slender cane teeth into a cotton holder.

Although clothing in the strict sense of the term was nonexistent, the Bacairí used, on ceremonial occasions, beautiful, skillfully made ornaments. An important ornament was the orógo, a diadem or feather headdress strapped to the forehead. The orógo was made by fastening a row of green parrot feathers to a cotton band, above which was fastened another row of yellow weaver bird feathers. Two long blue macaw feathers were set in the center so as to stand straight up above the forehead. The orógo was worn only by men. These headdresses are still used, for some were seen in the village of Simão Lopes.

There are at least four kinds of necklaces. The megesáuwa was made from small thin round disks of white and pink snail shell, as many as four hundred being strung on a string. This necklace was worn around the neck by women and around the waist by men and girls. The ikwihéno was also made from snail shell, but the disks were oblong with holes in both ends through which strings were passed. Although the ikwihéno was particularly used by men, women sometimes wore it together with the megesáuwa. The sawalápi was a necklace made from short black tubes of "tucum" palm nut and could be worn by both men and women at all times. Both men and women also wore necklaces made from the teeth or claws of the jaguar called the dodojéri. The Bacairí still use the megesáuwa, ikwihéno and the sawalápi.

Besides necklaces the Bacairí used a variety of other ornaments. The upauwį were armlets and anklets of cotton material decorated with feathers of different colors. The armlets, which were about two inches wide, were fastened tightly above the biceps and were believed necessary for the development of the muscle; similar bands were worn below the knee and around the ankles. Both men and women used the bands. An American missionary who experimented with Bacairí arm bands claimed that they caused him a great deal of distress but has observed no ill effects among the Indians. The paį was a feather ear ornament made from red toucan and yellow parrot feathers suspended from the lobes of the ears. Holes in the ears were made with a sharpened jaguar bone or with a sharpened rhea feather. The tajikainǫ, worn only by men, consisted of two blue macaw

feathers placed in a hole in the septum of the nose, so that the feathers swung one on each side of the head. Although the páiko, or scratcher, was not strictly an ornament, it is mentioned here as it had ritual meaning. The páiko was made by setting fish teeth into a gourd holder and was used for scratching the skin of the arms, legs, chest, and back so as to cause bleeding. The wounds were first washed with water and later smeared with the juice of the mukúna vine. The páiko was used by boys and girls during puberty seclusion and by adults who had sores on their bodies. It was believed that the use of the páiko made people strong and healthy. As far as could be ascertained the Bacairí did not mutilate the teeth, genitals, or other parts of the body. There was no sign of tattooing, but pubic hair was carefully pulled out by both men and women. Formerly the Bacairí kept large birds (believed to belong to the eagle family) in their villages for their feathers. The Brazilians call the bird "harpía" and claim that it is still kept by the Indians in the Xingú basin. The "harpía" was captured by shooting it with a blunted arrow and was kept in a special hut and fed. Villages often had several of these birds in captivity, the feathers being particularly used for feathering arrows. Parrots and macaws were also kept, their feathers being used only for ceremonial decorations.

Subsistence Activities. Vegetable foods formed the basis of Bacairí diet, with fish and meat taking second and third place. The principal animals hunted were monkeys, deer, wild pigs, tapir, and the jaguar. The jaguar, however, was not eaten, but was hunted for its skin, teeth, and claws. The principal weapon used was the bow and arrow. Hunters would stalk game alone or in groups, with the aid of dogs driving game into water or into steep rocky enclosures. There is no mention of the spear being used, but deadfalls and pitfalls were used. Many varieties of large fish were shot with the bow and arrow either from canoes or from the river bank. Lizards, turtles, and a wide variety of wild fruits, roots, and tender shoots and honey were collected at certain seasons of the year.

The major part of the food supply, however, was obtained through agriculture. The Bacairí cultivated bitter manioc, ópa; sweet manioc, taisę; beans, ipié; ground nuts, oremj; sweet potatoes, mahódo; "cará," návi; maize, ánji; potatoes, múla; cotton, kodokíra; "urucum," áunto; tobacco, tauwj; "piki" fruit, ípa. Manioc, maize, and sweet potatoes were the principal food crops. Cotton was grown for making hammocks and the various belts and strings used. Tobacco leaves, after being dried, were smoked by being rolled into cigars (tapáki). Tobacco seems to have had a ritual use, as the shamans smoked heavily before performing a rite. Bitter manioc was shredded on a shredding board into which fish teeth or fine pieces of shell had been imbedded. The pulp was squeezed in

a palm fiber in order to remove the poisonous acids. The meal was then used for baking cakes. The fine powder or flour which settled at the bottom of the settling tub was also used for baking cakes after it was thoroughly dried. Maize was eaten boiled or roasted. Sweet potatoes were roasted over coals. Maize meal was prepared and mixed with wild honey and water to make a non-alcoholic beverage. The Bacairí claim not to have used any form of alcoholic beverage.

Cultivated plots were located outside the village, each large household usually having a continuous area. Maize and many other crops were planted in September and October when the rains began. Sweet manioc and sweet potatoes could be planted the year around, especially on river banks after the rivers went down, following the rainy season. April was the harvest month and also the beginning of the ceremonial season.

Organization of Labor. The occupants of the large communal houses usually worked together in the fields, went hunting or fishing together, and generally coöperated in economic activities. Families could work individually if they wished or did not need the help of others. It was the task of the men to burn and prepare the fields for planting. As the men loosened the soil with the digging stick, women planted the seeds, slips, or pieces of stalk, as the case might be. Women and children thereafter took care of the weeding.

There was a certain amount of division of labor by sex. Women wove mats (anegéu) out of various fibers and hammocks out of cotton yarn, which was also spun by women. Men wove baskets. Both men and women made clay pots. Bacairí pots are quite distinct from the pottery of the Indians living on the upper Paraguay River. Bacairí pots are flat-bottomed and have straight vertical walls with everted rims. The pots in common use were, and still are, black in color, unglazed and undecorated. Some of the pots seen were made in the forms of frogs, turtles, fish, and birds. The Bacairí claim that they formerly had decorated pottery called amúga, painted with black, grey, red, and brown designs.

The Bacairí also had economic activities in which the whole village, or a number of communal houses, participated. The kometé, or collective land clearing, was one of these. A man would invite a large number of relatives and friends to assist him in clearing a new piece of forest land. The women would participate by preparing large amounts of food and honey beverage for the workers. The new field would remain the property of the man who initiated the kometé, obligating him to work in return if called upon, but sometimes the group of men who cleared the field would divide it between them.

House building was always an enterprise in which the whole village took part.

The group that was interested in raising the house cut the beams and poles necessary for the framework and prepared large quantities of food. While a certain number of men began to put up the framework, others went to gather grass for thatching. When they returned with the thatch they put on their ceremonial decorations and danced the mahulawári dance. House building was thus not only an economic act but also a ceremonial occasion.

Hammock weaving was, at times, a collective enterprise. A woman with a larger than usual cotton crop distributed cotton among her friends, and when the work was completed she organized a feast and dance.

Ceremonial trading expeditions (tulíki) were organized by the chief of the village. During the rainy seasons, when the rivers were high and canoe travel easy, the men of a village would collect whatever excess goods they had, such as bows, baskets, ornaments, hammocks, and even food, and would go to a neighboring village where the chief would receive them before the ceremonial house. The two chiefs would then supervise the exchange of commodities. After the trading was over the chiefs organized wrestling matches between teams of the two villages. Before the visitors left, a feast (tuláki, "swallow feast") was given in their honor. The motives for these trading expeditions were both economic and ceremonial. They were organized by a chief when the villagers actually required certain economic goods, but even when there was no economic need, goods were exchanged and the men of the two villages participated in wrestling, dancing, and feasting.

SOCIAL ORGANIZATION

The Bacairí claim not to have been a warlike people. They defended themselves if attacked, but say that they did not attack others. Each village had a chief (píma) who was assisted by an itáida. There was no chief for the whole tribe. The itáida, who was a young man, was selected by the chief with the consent of the villagers. The itáida could be the son of the chief but this need not have been the case, for any able young man was eligible for this position. At the death of the chief the itáida succeeded him.

The principal functions of the chief were economic, judicial, and ceremonial. As we have seen, the chief organized trading expeditions and participated in such activities as collective planting and house building. He also represented the people of his village when visitors arrived or when his own village made formal visits. If the village feared attack the chief selected a particularly brave man to lead the defense or to undertake retaliation. Discussions concerning disputes and other village affairs took place in the ceremonial house. Murderers were

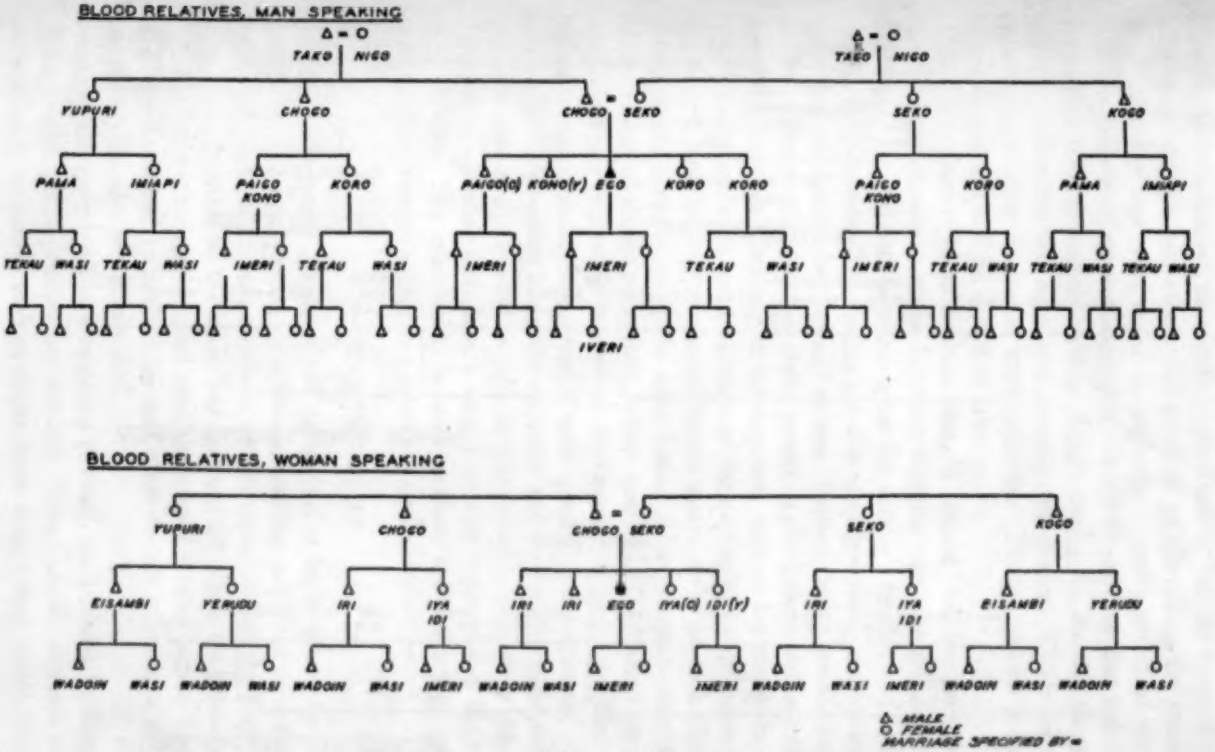

Fig. 1. Bacairí kinship nomenclature: blood relatives.

(Erratum: For tago (mother's father) read tako.)

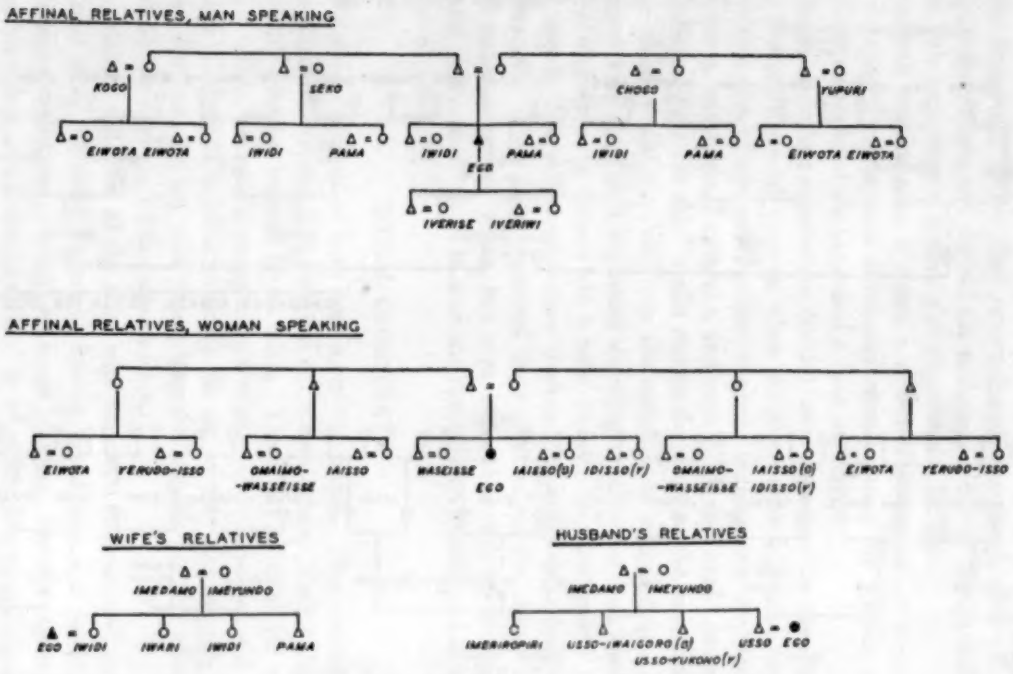

FIG. 2. Bacairí kinship nomenclature: affinal relatives.

exiled or, if a war was on, the murderer was made to bear the brunt of the attack. Thieves, adulterers, and others who persisted in disturbing the peace and harmony of the village were exiled through the common action of the villagers. Exile was considered severe punishment, for the Bacairí say that individuals who were exiled often committed suicide. Chiefs among the Bacairí, therefore, were not war leaders nor was succession governed by descent. Chiefs seem, thus, to have been primarily leaders of social activities. The part which a chief played in ceremonial life will be described later.

There appears to be no evidence that the Bacairí had clans or moieties. The kinship nomenclature is of the bifurcate merging type with parallel kin merged with lineal kin and with separate terms for mother's brother and father's sister and for cross-cousins. The kinship terms in ego's generation and in the children's generation are distinct for men and women. Beyond the bar prohibiting marriage between anyone called brother, sister, parent or child, there were no special rules governing marriage. Cross-cousin marriage was common but not preferred. There were no residence rules nor avoidances of the mother-in-law or father-in-law. As the Bacairí lived in large communal houses marriages often took place between young people brought up in the same house. After marriage they would take over a section of the house as their private quarters. The Bacairí say that families could move to another house with the consent of the house elder. Although polygyny was permissible, marriages were generally monogamous. The father and the father's brother had great authority and were highly respected. Younger brothers were not permitted to joke or play roughly with their eldest brother. The mother's brother and father's sister were also respected but less so than the elder brother. The relationship between brothers and sisters was one of great respect, the informant saying that incest was unthinkable.

THE LIFE CYCLE

Birth. Pregnancy (enokúa) was recognized as being caused by sexual intercourse. In advanced pregnancy a woman was not permitted to eat the flesh of such large animals as deer, capybara, or the tapir. When the time of delivery drew near a portion of the house was screened off where the woman gave birth (eraséllì) and remained secluded until the normal menses began. The expectant mother was assisted by her mother and other female relatives, a shaman being called only in cases of difficult birth.

A woman gave birth in a squatting position, the midwife holding her under the arms and gently pressing her stomach. Sometimes the stomach and back of the woman were bathed with poultices made from boiled cotton leaves. It was

the duty of the woman's mother to cut the umbilical cord with a bamboo sliver. The afterbirth was wrapped in a piece of cotton cloth and buried, because it was believed that if it were picked at by birds it would cause sickness and misfortune to the mother and child. The child was then washed, wrapped, and given to the mother. Later it was given the name of one of its ancestors.

During the seclusion period the mother and child were believed to be in a state of ritual danger (wánki). They were not permitted to go out in daylight and had to be fed and cared for by the female relatives. The first menses released the mother and child from seclusion, this release being known as tadaunúto. Shortly afterwards the father invited the villagers to a ceremony, itabíenli, during which the nokigóra and tadánwa flutes were played and only the women danced. By means of this ceremony the mother was reintegrated into the life of the family and the village.

After three years of age both boys and girls began to copy their elders, the boys playing with bows and arrows and the girls with spindles, and by the time the boys and girls reached puberty they knew how to perform most adult activities.

Puberty Rites. When the girls had their first menses and the boys reached the age of thirteen or fourteen they had to go into seclusion (posegéiro) for a period of two months to a year. It was believed that the longer the young people stayed in seclusion the stronger they would become physically. The longer periods of seclusion were also believed to enhance the prestige of the family. The boys and girls were not permitted to come out in daylight, and were fed and cared for by their parents. While the boys and girls were in seclusion they made pots and baskets for family use.

With boys the seclusion was inaugurated by an ear-piercing rite. A number of men with sons of about the same age would perform this rite collectively before invited guests. After eating and drinking, the poinwáto song and dance were performed. The boys were now in a state of wánki, or ritual danger, and were secluded immediately after this rite. The girls' ears were pierced when they were babies, but the ear-piercing of the boys corresponded to the first menses of the girls.

The release from seclusion was signalized by the feast of tadaunúto. The parents of the young people accumulated much food and went on a big hunt on the day before the feast. The chief and all the villagers were invited to the ceremony, during which all the Bacairí songs and dances were performed and the young people were presented gifts by the villagers. The girls would now take the strings of beads from around their waists and wear them around their

necks and their mothers would give them the genital covering (ulurí). The girls and boys were now eligible for marriage.

Marriage. Marriages (todohokúinle) were arranged by parents or by older brothers or sisters. The father and mother of the boy, for instance, would take presents of ornaments and food to the parents of the girl. If the parents of the girl accepted the gifts, it meant that they favored the marriage, and if they refused, it meant that the suitor was not acceptable. The marriage ceremony took place in the girl's home, the date being arranged by the parents. At the girl's house the young couple were seated side by side with linked arms. They were given advice by their respective parents and relatives. Marriage was not considered a period of ritual danger nor were extensive feasts given. It appears to have been an affair involving only the families of the young couple.

Burial. The body was painted, ornaments were put on, and then wrapped in a hammock. It was buried (epiodíle) in a grave with the feet to the east so that the face would be towards the rising sun. Although old and worn objects were burnt, most of the property of the dead was shared among the relatives. The part of the house occupied by the dead person was washed, and clean sand was sprinkled on the floor. There was a mourning period of one month (logúno) during which the immediate relatives were in a state of wánki.

SHAMANISM

When a person died the ghost (kadópe) went into the sky or into the water, or sometimes wandered upon the earth. Ghosts of the dead often came back to the village to play tricks on people. The Bacairí did not believe that the ghosts of the dead caused death and, therefore, were not afraid of them. They were, however, afraid of certain evil spirits, for instance, eradupíra, who caused death and sickness.

To become a shaman (piáji) a young unmarried man would train with an old shaman for a period of six months to a year. During this period sexual intercourse was forbidden, fasts were periodically observed, and the novice had to abstain from eating meat. Much of the training took place in the woods, where the old shaman would teach the novice the curative properties of roots and herbs and, also, how to get in touch with the ghosts of dead shamans. The training would be complete when the novice acquired his own spirit helper, which was always the ghost of a dead shaman. Sometimes the revelation was so powerful that the young novice would fall to the ground in a trance. The spirit that then appeared to him instructed him how to make a flute (either emíni or

kanagéra), which he kept in the secret flute house, and gave him a special tune by which he could always call his spirit helper. The novice had then to prove himself by curing some sick person or by finding lost property. If he were successful, he became a recognized shaman.

Before beginning a performance shamans always fasted for several days and smoked heavily. In curing a sick person the shaman asked his spirit helper for instructions, which usually were explanations of how to remove from the body objects which caused the illness. Besides removing objects from the body the shamans prepared medicines. Headaches and pains in the body were cured by drinking the juice of the kágu plant ("sipo" vine). The boiled juice of the peméira tuber and turógi leaves were also used for pains in the chest. For healing the wounds made by the scratcher the juice made by boiling the kumatáni plant was used. The Bacairí also prepared aphrodisiacs from the katáino plant and by mixing "piki" nuts, honey, and turtle eggs.

GAMES

The Bacairí played, and still play, a form of Indian football called toinyaméli. The ball (toin) was made by covering a round gourd with native rubber, leaving a small opening. The gourd was then crushed, the pieces taken out through the hole, air was blown into the ball and the hole covered over with rubber. The balls varied in size from three to eight inches in diameter. The game was played on a field about fifty yards square with four goals placed midway on each of the four sides. Small white circles (shipíri) marked the goals, and another circle about a yard in diameter (yotári) was placed in the center of the field.

The game was played by two teams with equal but varying numbers on each side. One team called piáto had the north and east goals, the other team called tosáundo had the south and west goals. To score a point a team had to put the ball across the opponent's goal. The ball could not be carried in the hand but could be kicked or hit with any other part of the body. The ball had to be kept low and only when it was three yards from the goal could it be kicked over the goal keeper. Each side had a leader, who did not play but encouraged his players. The organizer of the game threw the ball from the center of the field to the piáto side at the beginning of the game or when the ball went out of bounds. The game lasted until the players were tired, the winners being the team with the greatest number of points.

The Bacairí also organized wrestling matches called tadáinpudíli. The object of the match was to knock down the opponent by pushing or hitting with the

shoulders; grasping or hitting with the hands was not allowed. The loser was the one who had the greater number of falls.

CEREMONIALISM

Among the Bacairí ceremonialism was highly developed. Although songs and dances were performed whenever the people had an abundance of food and economic activities permitted the leisure time, there were special occasions (the ripening of corn, ear-piercing of boys preparatory to going into seclusion, the coming-out of seclusion of a woman after childbirth, house building, the distribution of cotton by women) during which particular songs and dances had to be performed. At these times it was customary to invite people from neighboring villages to participate in the festivities.

The musical instruments of the Bacairí consisted of rattles and flutes. The drum does not appear to have been used. Rattles were of two kinds: the common gourd rattle (páko) and "piki" nut hulls tied together and fastened to the ankles of the dancers. There were at least four kinds of flutes. The emíni flute was made from two pieces of soft sapling, hollowed out and fastened together with wax and string. This flute was about three feet long with four finger holes and a separate mouthpiece. The kanagéra flute was made like the emíni but was shorter and had a different sound. Both the emíni and the kanagéra were secret flutes of the shamans and were always kept in the secret flute house connected to the kadoéti (common house) where they were played only at night so as to prevent women from seeing them. If a women were to see one of these flutes misfortune would befall her. When the secret flutes were played there was dancing but no singing. The tadanwa was a bamboo flute made in five different lengths without finger holes and was not secret. The nokigóra was made by fastening together four short tubes of bamboo of different lengths. These were played in pairs, one player answering the other. This flute was not secret and could be accompanied by singing. In addition to the rattles and flutes, the Bacairí used highly decorated sticks or batons called kadóapurí in some of their dances.

Besides the flutes and the dances performed to their tunes, the Bacairí had songs and their corresponding dances which were not always accompanied by flute music; for instance, the oríko was a song and a dance performed with the decorated batons which could be performed at any time; the pahoewáto, another general song and dance which also could be performed at any time; the yawaisári, the corn song and dance in which neither the flutes nor batons were used; the mahulawári, performed during the house building ceremony without

batons or flutes; and the poinwáto, sung and danced during the boys' ear-piercing ceremony.

One of the most important ceremonial events of the year was the annual corn dance, anjéintabíenli, which was performed when the corn ripened in the fields. The man who had the largest corn crop was the organizer of the ceremony. In order to have enough corn, the Bacairí usually planted special fields, the yields of which were used on this occasion. On the day before the corn-gathering all the men went on a big hunt in order to have large quantities of meat ready for the feast. Early in the morning of the following day everyone went out to the fields to gather the ceremonial corn. Later in the day the women prepared large quantities of corn porridge and roasted ears.

On the morning of the third day the actual ceremony began in front of the ceremonial house. The organizer of the dance distributed roasted ears or pieces of ears to all the villagers, children included. Then at a signal from the leader, the villagers began throwing the roasted corn in all directions and at one another. After the roasted corn was disposed of, the people ate the corn porridge and meat prepared on the preceding day. They then washed themselves in the river and put on their paint and ornaments. When the villagers had again gathered before the ceremonial house the dance leader took a piece of corn husk and went from man to man asking for a song leader. The man who took the offered corn husk then began the yawaisári, or song in praise of corn. Little by little the others joined in the singing and eventually began to dance. The words of the song told how corn came to the Bacairí and how it made the people strong and healthy.

The ransegéro, or ear-piercing ceremony, was performed just before a boy went into puberty seclusion. It was customary for men who had sons of about the same age to coöperate in getting large quantities of food ready for the feast. After the feast was over the ears of the boys were pierced and the poinwáto song was sung. When boys and girls came out of seclusion there was another ceremony during which all the songs and dances were performed with the exception of the secret flute tunes.

The mahulawári was performed during coöperative house building in which the whole village participated. While the women prepared food and some men were putting up the frame, a certain number of men went in search of palm fronds for thatching. When these men returned with the palm fronds, they danced and sang before the new house with their loads on their backs and in full ceremonial regalia.

The custom of distributing cotton by a woman with a good cotton crop and

having other women weave hammocks for her has already been mentioned. When the women had completed their weaving and returned the hammocks to the donor of the cotton, she gave a feast during which the women sang and danced the yamaikúma. This dance was given at night accompanied by flute playing.

When a woman came out of seclusion after the birth of a child the women of the village danced to the tunes of the tadánwa and nokigóra flutes.

STORIES

Although the Bacairí have many stories only two were obtained. One of these is the yamadílli, or the origin of day. In the beginning it was so dark and cold in the world that the people had to cover their bodies with grease to keep warm. The people wanted the sun to come out, so they put on their ornaments and painted their bodies and began to pray to orimóto, the great spirit who lived in the north. The Bacairí believed that orimóto was not an Indian but just a man who lived in a stone house with some of the animals which he had created. The people continued praying to orimóto and when light finally came the people were old and the children had grown up.

Yawétihadúho, or "those who died in the fire," is a story which tells about the origin of cultivated plants and the yawaisári, or corn dance. Once long ago there were a number of boys who were in puberty seclusion. At that time there were no cultivated plants, the people living by hunting and collecting wild plant foods. The boys were kept in seclusion so long and had so little to eat that they became very tired. One day, when the relatives of the boys went out to collect food, the boys all committed suicide. When the relatives returned and found the boys dead, they were sorry and angry with themselves for neglecting them. They built a large fire and after dancing around the fire naked, they jumped into the flames and were burned to death. The leader of this act was Yawíti. Later the soul of Yawíti returned and spoke through one of the living Indians. He explained to the Indians how to grow corn and other food crops and how to perform the corn dance. After that the corn dance (yawaisári) has always been performed.

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AGE CHANGES IN DIMENSIONS WHEN ONE DIMENSION IS CONSTANT[1]

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THE EARLY OBSERVATIONS of changes during growth call attention to changes in certain proportions, notably relative head size, arm length, leg length, and trunk length. To the present day, however, there is little information regarding the extent to which growth in some dimensions continues after it has temporarily ceased, or is retarded, in one dimension.

Repeated measurements on the same individuals would yield most valuable information, but an adequate amount of such data is not now available.

Our problem is: If we select children of the same sex who have the same stature, for example, 40 inches, and then arrange them by age groups, will there be a difference between these age groups in other dimensions, for example, in leg length, arm length, head length, trunk length? And, if so, to what extent?

Only when individual values are recorded, or averages for dimensions when age and one other dimension are constant, can the data answer this question. There are few such published series. Available data show that during growth, when one dimension is constant, some dimensions increase with age, and some decrease. Apparently, the kind and amount of change varies with age; and in some dimensions, with sex.

In general, there are increases in certain other dimensions at higher age levels when one dimension is constant. This is most apparent when stature is constant. There is no statistical reason why this should be so. The phenomenon is basically biologic. It is as though nature being thwarted in the increase of one dimension continues growth in another dimension. Thus, for a given stature, those who are older have achieved greater increments in certain other dimensions than have those of that stature who are younger. This is especially the case with regard to weight; and increased weight means increase in some dimensions. If proportions vary little at a given age level, as, for example, between head breadth and face breadth, holding one of them constant shows little influence of age on the other dimension.

Body length constant. In R. S. Wallis' series of New York Private School

1 Computations were made with the assistance of Federal Aid Students at the University of Minnesota. Some of the computations, the typing, and the figures were done as part of a Works Progress Administration Official Project No 665-71-3-69 at the University of Minnesota.

children, age 1-8, including some repeated measurements on the same individuals, when trunk length is constant, there are increases, for each sex, in head length and shoulder width, but a decrease in head breadth, cephalic index, and pelvic width. In face height males show increase, females, a decrease. In males, the maximum increments are: for head length and face height, at ages 2-3; for head breadth, cephalic index, and shoulder width, at 7-8; for pelvic width, at 6-7.

For the total age range males have the greater increments in head length, and females, in shoulder width. Males have the greater decrements in head breadth and cephalic index. In females the decrement in pelvic width exceeds that of males by 1.6 mm.

Stature constant. In the Worcester series, when stature is constant, head breadth increases in males at ages 8-9, 11-15, and decreases at 5-8, 9-11. There is very little or no change at 15-18.[2] In females there is increase at 14-16 and 17-18; decrease at 5-9, 10-14, 16-17, and 18-19. The total change in males is -5.2 mm, and in females, -4.2 mm. These results compare with the decrease in head breadth in New York Private School children.

In face breadth males show increase at 5-6, 8-9, 14-15, and 16-17; and decrease at 6-8, 9-14, 15-16, and 17-18. The total change is -2.2. In females there is increase at 6-7, 9-10, 14-15, 17-18, 19-20; and decrease at 5-6, 8-9, 10-14, 15-17, and 18-19. The total change is -9.3.

In head length males show increase at 6-7, 8-9, 14-16, and decrease at 5-6, 7-8, 9-14, and 16-18. The total change is -10.2. Females show increase at 6-7, 13-15, 16-18, and 19-20. Decrease occurs at 5-6, 7-13, 15-16, and 18-19. The total change in females is -2.5.

In sitting height there is increase in males at 6-7, 8-10, 11-12, 13-17; and decrease at 5-6, 7-8, 10-11, 12-13, and 17-18. The total change is 26.6.

In females increase occurs at 5-6, 7-8, 10-11, 12-17, 19-20; and decrease at 6-7, 8-10, 11-12, and 17-19. The total change is 42.5.

In Liverpool males (data of Muffang) when stature is held constant within a range of 5 mm, the total unweighted mean changes from age 12-13 to age 14 are: head width, .05, head length, -.88; cephalic index, .43. From age 14 to 15 these respective changes are -1.45, -1.05 and -.35. In English air candidates, when standing height is constant, the correlations with age are: vital capacity, .00; sitting height, .07; chest circumference, .30; weight, .19. These values are nearly identical with the respective zero-order correlations.

In English cadavers (Blakeman's series, 117 males, age 24-70; 94 females,

2 When age levels are designated, the observation applies to each year of included age level. Thus, 15-18 means for 15-16, 16-17, and 17-18.

age 20-70), when stature is constant, the correlations with age are: cephalic horizontal circumference, -.06; length × breadth × height of head, -.12; brain weight, -.20. These are slightly lower values than those of the respective zero-order correlations, all of which are negative.

The largest series from which data bearing on this problem are obtainable is Elderton's series of Glasgow school children, 32,800 males and 30,965 females, age 6-14. The data are grouped under the four classes: A, poorest districts; B, poor; C, better class; D, higher class.

When stature is constant, changes in weight, at age intervals, vary with socio-economic class. In the lower ranges of stature the higher age groups show decrease in weight, whereas at the upper ranges of stature there is considerable increase in weight. In the lower socio-economic groups the increase is greater in the early years than it is in the higher socio-economic groups; but is less—and in some instances there are absolute decreases—at the higher age levels.

When these values are plotted on a grid, they show, for each class, in the lower statures, a rising curve which reaches its maximum at 3-4 years after inception, then drops, and at completion often is below the point of inception at the lowest age level. At higher statures the downward trend begins at 6-7 years after inception and does not descend to the level of inception. At the highest statures, 52-60 inches, the line becomes, in most instances, a straight line of steep gradient. The trends are similar in the two sexes and in each of the four classes.

At the lower ranges of stature the increases in weight with age are less, when stature is constant, than the mean increase at age levels when stature is disregarded; whereas at the upper levels of stature, the reverse is the case. For example, the average increase in weight (pounds) for males is 1.48 for age level 6-7; when stature is held constant, this is, for statures 40-43, 1.60; at statures 44, 1.63; at 45-46, 1.65; at 47, 1.76.

The discrepancy between age change when (a) stature is disregarded, and (b) when it is held constant, is greatest at the lowest and at the highest ages and statures.

Thus the mean increase in weight in males from 13 to 14 years of age, all classes, is 2.31 pounds. When stature is held constant, the increases are, for respective stature levels 48-63: .10, .40, .75, .42, .80, 1.15, 1.57, 1.97, 2.35, 2.70, 3.10, 3.50, 3.90, 4.25, 4.57, 5.45.

This trend holds for each sex and socio-economic class. When stature is constant, increase in weight becomes greater with increase in age or in stature. For any given stature, the older the child, the greater the year increment in weight.

Comparable results are revealed by an analysis of the data of various authors

in *Anthropologie* on Central and Eastern European children, age 6-17 (weight in grammes). When stature is constant, generally weight increases with age. This is not, however, invariably the case. For example, in two of the four series, males 6-7 show decreases at stature level 105-109 cm; in one of 6 series, at level 116-119; in one series, at level 125-129. The largest increases in males occur at ages 13-14 and 15-16; in females, at 8-9 and 15-16.

In college students, males, age 16-21, when stature is constant, there is increase in weight at each year interval. For each stature interval from 56 to 77 inches, the total increase from age 16 to 21 is 8 pounds, except for statures 57-58, 63, and 73-77, at which the increases are 9 pounds. The increase diminishes from 2.3 pounds at 16-17 to 1.3 pounds at 20-21. In females the total increase in weight from age 16-21, statures 56-72, is 1 pound at stature level 56 and 60-63; 2 pounds at 57-69, and at 64-66; 3 pounds at stature 67; 4 at 68-70; and 5 at 71-72. Thus girls show at these ages much greater increases in weight at their higher statures than do boys for these stature levels or for their highest statures. In each sex the percentage of total increase over the weight at age 16 decreases with increase in stature. This percentage decrease is fairly uniform, by stature intervals, in boys, but drops very rapidly in girls, from 7.47 to 1.94; in boys, from 8.51 to 5.45.

Jackson's data on University of Minnesota female students, for the period 1912-1929, age 16-23, statures 58-70.9, show a decrease of .4 pounds at stature level 59, 6.9 at 60, 2.4 at 65, 1.5 at 66, 1.2 at 69. There are increases in weight at other levels of stature, the maximum being 24 pounds at 70-71 (N is not statistically significant), 5.1 at 69-70, 4.7 at 66-67, and 4.3 at 61-62. The total increment in weight for each interval of stature for ages 16-23 is 1.31.

Sitting height constant. In the Worcester series of Boas and Wissler, when sitting height is constant, males, age 5-18, show in head breadth increases at 6-8, 12-13, 14-15, 16-18; and decreases at 5-6, 8-12, 13-14, 15-16. Total change is a decrease of 2.1 mm. Females, age 8-20, show increases at 9-10, 11-13, 14-16, 17-18, 19-20; and decreases at 8-9, 10-11, 13-14, 16-17, 18-19. The total change is 5.1 mm.

Face breadth increases in males, at ages 8-9, 10-11, 12-15, 16-17; and decreases at other age levels. The change is 0.44 mm. In females there is increase at 8-12, 13-15, 17-18, 19-20, and a decrease at other age levels. Total change is 2.45 mm.

In males, head length increases at 7-8, 10-11, 12-13, 15-16, 17-18. At other levels it decreases, except at 13-14, where there is no change. The total change is -5 mm.

In females, head length increases at 8-9, 10-13, 16-18, 19-20; and decreases at 9-10, 13-14, and 18-19. The total change is 6.8 mm.

In Cripps, Grenwood, and Newbold's two series of English Air Forces Candidates, males, mean age 23.9, S.D. 5.1, the correlations with age, when sitting height is constant are: vital capacity, -.05; standing height, -.06; chest circumference, .25; weight, .14. (The zero order of respective correlations with age are -.02, -.03, .30, and .21).

In the Worcester children series the correlations with age, sitting height constant, are, for respective stature interval by months, from age 6 to age 9 and 11 months: weight, .29, .14, .18, -.28; head width, .26, .36, .00, -.04; stature, .04, .15, .15, .31; head length, .27, .10, .44, .20.

Face Breadth Constant. When face breadth is constant, Worcester males show increments in stature, with age, from 23 mm at 5-6, to 103 mm at 11-12, and the lowest values, 13 mm, at 16-18. Females show lower increments: 11.7 mm at 8-9, to 51 at 11-12; and decreases of 18.8 and 10.7 at 18-19 and 19-20.

In males head breadth shows no change greater than 1 mm at any year interval. The total change from 5-18 is -1. At 8 various year intervals there is no change. Among females the change ranges from -2.2 at 8-9 to 1.81 at 19-20. The total change, 7-22, is 1.5 mm.

Sitting height increases in each sex at every age level, except in girls 18-20, where the decreases are 1.9 and 5.0 mm. The maximum increment in males is at 13-14 (33 mm); the minimum is at 17-18 (5 mm). In girls the maximum is at 12-13 (27.4 mm). At each age level 6-18 the increments in males exceed those in females except at 10-11, 12-13, and 17-18, where girls show greater increments.

Boys show increases in head length except at 7-8 and 11-12, where the decrease is 1 mm. Girls show increase at 10-13, 14-15, 16-18, 19-22; and decrease at other age levels. The total change in males is 10.0 mm, and in females, 5.6.

Head breadth constant. When head breadth is constant, stature increases in both males and females at each age level, except, in girls, at 15-16, and 18-21, when there are decreases. The smallest increase in males is at 16-17 (17.6 mm), the largest is at 14-15 (79.1 mm). In girls the smallest increase is at 21-22 (2.9 mm), the largest is at 11-12 (68.1 mm). In each sex the increment decreases at the higher age levels. In girls there is a decrease at 4 of the highest 7 age levels.

Males show increase in head length for each age level, except 8-9, and 11-12. The total increase is 12.8. The greatest decrement, 1.3 mm, is at 11-12, the greatest increment is at 13-14 (2.32 mm). (The change in females was not computed.)

Sitting height increases at each age level, except at 17-18 in males, and at 15-16 and 18-20 in females, where there are decreases. At 7-10 the increases in males exceed those in females; at 10-13, and 17-18, they are less than in females. Face breadth increases at each level in males except at 5-6; and in females increases except at 9-10, 15-16, and 19-20, where there are decreases. The increase in males is greater than in females, except at 11-12 and 13-14, where it is less, and at 17-18, where the increases are the same.

Head length constant. In stature, when head length is constant, each sex shows increases at every age level, except in females at 6-7, 18-19, and 20-21, where there are decreases.

In sitting height males show increases at each age level; and females, at all levels except 18-20, when there are decreases. The minimum increase in males is at 17-18, the maximum, at 13-14 (37.3 mm). In females the maximum increase is at 11-12. In males the amount of increase diminishes from 15 to 18, and in females, from 15 to 23.

In face breadth males show increase, except at 5-6 and 15-16; females show increments except at 8-9, 11-12, and 14-16, where there are decreases. Maximum increases in males are at 17-18 and 7-8; in females, at 22-23 (N=3 and 3), and at 8-9.

Sex differences. In most comparisons the two sexes follow the same pattern of change, but frequently with differences at a same age level. The total change in males is generally greater than the total change in females, but is less at some age levels for almost every dimension. When stature is constant, in the age range 6-14, females in the higher socio-economic levels exceed males in weight increase at statures 56-69 inches; whereas in the lower economic levels males retain their predominance of increase. In the series of university students, age 16-21, statures 56-72, males retain their predominance of increase in weight at each age level, when stature is constant; moreover, the amount of increase in males remains fairly constant at all intervals of stature, whereas in females it increases from stature 63 to 72 inches, from 1 pound to 5 pounds. This trend, however, is not found in University of Minnesota females, statures 58 to 70.9, age 16-23, in whom there are decreases in weight at statures 58-59.9, 64-65.9, and 68-69.9, with maximum increase at 70-70.9 and 66-66.9. The change in weight from age 16-21, for statures 58-70.9, for females in the last mention series are: 58-58.9, -4.2; 59-59.9, -5.7; 60-60.9, 3.9; 61-61.9, 3.1; 62-62.9, 1.2; 63-63.9, -.7; 64-64.9, -2.4; 65-65.9, 2.8; 66-66.9, 3.1; 67-67.9, 2.7; 68-68.9, 14.3; 69-69.9, 14.1; 70-70.9, -1.3; total change, 30.9. It thus appears that when stature is constant, the in-

crease (or decrease) in weight with age in the University of Minnesota females differs from the values of total university females for those ages and statures. In most of these last mentioned comparisons the number of observations is sufficiently large to suggest that the observed differences are statistically significant.

SUMMARY

Certain children in the United States, eastern Europe, and in Glasgow, and college students in the United States, show an influence of age on certain other dimensions when one dimension is held constant. This is reflected in the increase in weight with age when stature is constant.

In Glasgow children, however, when stature is constant, weight decreases with age from age 9 to 14, for statures 39 inches to 43 inches. For statures of 44 inches there is increase in weight from age 6 to age 10, and thereafter a decrease to age 14. For statures of 45 inches the increase continues to age 11, and thereafter decreases. At stature 46 inches weight increases to ages 10, 11, or 12, and thereafter decreases. For stature 47 inches, weight increases in one group to age 13, then decreases, and in some groups decreases after age 10. At stature 52 inches to 60 there is a much more rapid increase in absolute weight, which generally continues very uniformly to age 14. At all intervals of stature up to and including 52 inches the increase in weight in girls is, at each age level, less than in boys; but the curves of increment, or of decrement, are very similar. From statures 53 inches to 60 inches, however, the increases in weight of girls sometimes exceed those of boys; and the sex differences in increase in weight at the higher ranges of stature are very small. For the ranges of stature 39 inches to 45 inches, in general the increments are greater in the upper socio-economic classes than in the lower classes. At the higher statures they are approximately the same in all classes.

In American children, males, when face breadth is constant, age does not influence head breadth, or certainly not to any marked extent. Head length is little, if at all, affected.

When head breadth is constant, head length increases appreciably, with the exception of two age levels, and with one exception, face breadth increases. When head length is constant, face breadth, with two exceptions, increases. When stature is constant, there is generally a decrease in face breadth in males and in females, at about half of the age levels; face breadth is as likely to show decrease as increase, and head length generally shows decrease. When sitting height is

constant, the effect on head and face dimensions is about the same as when stature is constant.[3]

LITERATURE CITED

BLAKEMAN, J. (assisted by ALICE LEE and KARL PEARSON) *A Study of the Biometric Constants of English Brainweights and their Relationships to External Physical Measurements* (Biometrika, vol. 4, p. 135, 1905-1906).

BOAS, FRANZ, and CLARK WISSLER *Statistics of Growth* (Annual Report, Department of Interior, Commissioner of Education, vol. 1, pp. 25-132, 1904).

CRIPPS, LUCY D., MAJOR GREENWOOD, and ETHEL M. NEWBOLD *A Biometric Study of the Inter-relations of "Vital Capacity," Stature, Stem Length and Weight in a Sample of Healthy Male Adults* (Biometrika, vol. 14, p. 327, 1922-23).

DIEHL, HAROLD *Heights and Weights of American College Men* (Human Biology, vol. 5, p. 455-467, 1933).

Heights and Weights of American College Women (Human Biology, vol. 5, pp. 609-619, 1933).

ELDERTON, ETHEL M. *Heights and Weights of School Children in Glasgow* (Biometrika, vol. 10, pp. 300-303, 1914-15).

JACKSON, CLARENCE *Stature and Weight of University of Minnesota Female Students* (Unpublished data, 1912-29).

MALY, JIRI *Relation between Chest Girth and the Weight, Height and Age* (Anthropologie, vol. 3, pp. 289-301, 1925).

MATIEGKA, J. *L'accroissement du rendement physique au course de la croissance estimé d'apres les resultants obtenus dans les exercises de gymnastique* (Anthropologie, vol. 3, pp. 267-278, 1925).

Slovenské dité z Bánské Bystrice (Anthropologie, vol. 9, pp. 7-21, 1931).

Tělesná Povaha dítěte v Bratislově (Slovensko) (Anthropologie, vol. 8, pp. 3-18, 1930).

MUFFANG, M. H. *Escaliers et étudiants de Liverpool* (Anthropologie, vol. 10, p. 28, 1899).

STAMPACH, FRANT *Prispěvek k studiim o umělé deformaci a kultu lebek no ostrově Mallicolo v Novych Hebridách* (Anthropologie, vol. 8, pp. 188-191, 1930).

Tělesnyráz slovenské školni mládeže na dolnim Považi (Anthropologie, vol. 8, pp. 19-28, 1930).

STIEROVA, EMMA *Tělesné vlostnosti školni mládeže z Radnic a skolí* (Anthropologie, vol. 6, pp. 120-140, 1928).

WALLIS, RUTH S. *New York Private School Children* (Unpublished data, 1926-30).

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3 Upon request the author will send a planographed copy of the tables on which the above data are based. Address Department of Anthropology, TSM-C, University of Minnesota, Minneapolis 14, Minnesota.

A NOTE ON DOMINICAN BASKETRY AND ITS ANALOGUES*

DOUGLAS TAYLOR AND HARVEY C. MOORE

TYPES AND TECHNIQUES

(By Douglas Taylor)

BASKETRY of the Island Carib is relatively little known, and descriptions of the materials and technical details are almost wholly unrecorded. The following notes are offered to remedy this situation.

Ischnosiphon arouma, the lárumą of the Dominica Carib (< Island Carib -ualamą), is today found growing wild in the rain-forests of the island's interior, although, for greater convenience, basket-makers sometimes plant it nearer home. This little palm here attains maturity in about a year at a height of 12 to 15 feet. After flowering, the leafy crowns gradually bend and bear the slender stems to earth, send forth roots, and so propagate the parent stock. The Carib recognize a secondary variety known as lárumą tukusię which, they say, does not exceed five feet in height. Because it provides such short strands, it can be utilized only for making small ornamental baskets, for which work it is, moreover, especially suited by reason of the facility with which it can be split.

When they have attained their maximum growth, the stems are cut; split into two or four segments and most of the soft pith removed; then tied in bundles of from 70 to 100 stems and carried down to the coast, where they are spread out in the sun to dry.[1] When they have acquired by this process the reddish brown color characteristic of the island's basketry, they are tied back into bundles, ready, for the most part, to be stored until required on the cross-beams or suspended from the ridge-pole of the basket-makers hut or mwiną. When black strands are wanted for decorative purposes, a smaller bundle of sun-

* Because of difficulties of communication, Mr Taylor has had no opportunity to read proof of this article—Editor.

1 Apparently this procedure is entirely foreign to Guiana, where only freshly cut stems are used, either green or—after scraping off the outer skin-like bark—stained with various coloring matter. Roth indeed says that exposure to the sun would render the lárumą brittle and useless. On the other hand, the Dominica Carib claim that strands made from green stems would soon spoil, and that work done with such would "open," that is, show gaps owing to subsequent shrinkage. There appears to be a degree of reason on both sides: strands woven while green tending to shrink or go mouldy; while sun-dried stems give strands which are of course more apt to break off when much bent. Perhaps this is one reason why "hour-glass pattern" technique is unknown, and why the making of cassava-squeezers (rukuma, or matapi) is almost a lost art.

dried stems is buried in a mud hole by the river, and left there to steep for a few days until the lárumą turns a rich lustrous black. Stems so treated lose, however, in strength.

Preparatory to being woven, each stem segment is re-split with the thumb nail into two or three strands (according to the size of the original stems and the nature of the work in hand); and the remaining pith removed by passing each of these under the blade of a knife held perpendicularly between thumb and index finger. Finally, each strand is separated in the sense of its thickness into a skin or outer layer, which is finer and more flexible, and a mam (<French membre "member," "frame-timber") or inner layer, which is coarser and less supple. This operation requires skill: it is accomplished by breaking a complete strand near its butt; then seizing the exposed end of the mam between the teeth and peeling off the skin with a steady pull of the right hand, while the left controls the unseparated part. The "tooth-hold" must of course be shifted from place to place until the strand has been peeled throughout its entire length into two layers.

Although the Dominica Carib make several other types, the Creole term panier caraïbe (Island Carib bakara, or yamąti) is applied only to those close-work, rectangular baskets of lárumą, consisting of a container and a cover, each of which is composed of a skin in ornate pattern and two or three colors built up over a white (and usually plain) frame basket or mam. Overlapping leaves of cachibou *(Calathea)* or of balizié *(Heliconia)* are adjusted onto the latter in such a way as to form a continuous layer between it and the skin, and thus to render the finished product more or less waterproof. Varieties of such baskets, distinguished according to their shape and size, are known locally as: panier voyage (Roth's pegall), portemanteau and valise (Roth's larger and smaller satchels), and niche (literally "nest": a series of twelve small ornate oblong baskets, one fitting into another after the manner of a Chinese puzzle). Although there are still one or two Carib who know how to weave in twill (see below), all of the above are usually woven today in wicker pattern: the weft strands passes alternatively over and under one warp element, which consists of one stouter, or two or more ordinary strands superimposed so as to be relatively rigid.

The first component of a panier caraïbe to be made, and the most difficult of construction, is the mam of the container. As its name implies, this is made of the inner layer strands of lárumą. A beginning is made on the flat base by squatting on the floor and holding down a series of warp elements in position with the feet until they can be secured by passing the wefts.

Once this foundation has been completed to the desired size and shape, warp

and weft strands are "fulled" by pressing them neatly close together, and the incipient basket is ready to be "turned." The projecting strands serve as warps for the sides of the basket which are built up by multiple additional wefts. On the foundation's longer sides, where the original warp elements project, this presents no difficulty; but the original wefts projecting from the shorter sides must be thinned out before they can serve as warps. This is done by cutting short the first of every three weft strands (sometimes the first two of every four are

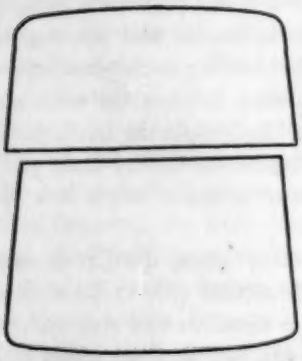

FIG. 1. Elevation of basket cover and container (one-tenth natural size).

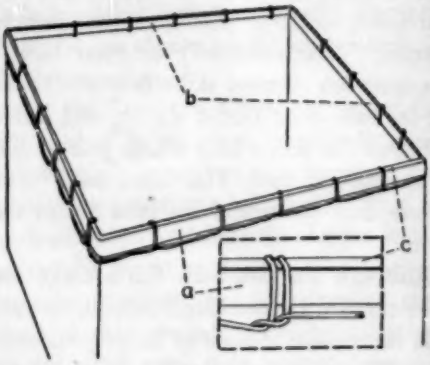

FIG. 2. Showing roseau (a and b) and larumą (c) edgings; with inset showing manner in which they are sewn onto the basket mouth.

cut) and tucking their ends under the others. The remaining two strands of each are henceforth treated as a single warp element. Before proceeding with the sides, the warps projecting in the proximity of the four corners (which the basket-maker still calls by their Carib name: ariete) are "broken," that is, folded or bent at right angles so as to indicate the points at which the additional wefts must be turned and tightened. The mam is turned so as to leave the strands' shiny side inwards. The reverse is of course true in the case of the skin.

As each additional weft (which may make two or more circumferences of the basket) is introduced, the end of the previous one is tucked neatly under. Moreover, in order that the basket's cover may fit tightly, the sides of the container are made to slope inwards so that when finished its mouth is somewhat smaller than its base—the reverse being true of the cover (see Figure 1). This necessitates very nice adjustment in tightening each successive weft if a lopsided effect is to be avoided. To keep the strands well pressed down and prevent their

slipping up, they may be moistened from time to time; and strips of maho (a name given to the fibrous bark of several widely different species of trees) are introduced across the corners whenever the work is temporarily laid aside.

The mam of the basket's cover is made in the same way, except that its foundation, before being "turned" is tied over the mouth of the container, and the weft strands of its sides built up and tightened around the latter in order to insure a perfect fit.

The Carib basket-maker usually finishes a number of mams (both containers and covers to fit) before starting on their skins. When he is ready to complete a basket, he selects some suitable leaves (see above), removes their midribs, and puts them in the sun to wilt and dry somewhat (without which they would rot in the basket and be worse than useless). Then he adjusts leaf-stem props both diagonally and criss-cross within the mam in order that its sides may remain rigid while the sides of the skin are being built up around it. Layers of wilted leaf are now laid tile-wise over the outside of the mam, up to and over the edges of its mouth, and secured in place by strips of maho which pass around and across the mam in such a way as to admit of ultimate removal. The foundation of the skin (see below) is now tied firmly onto that of its leaf-covered mam, and its sides built up by the introduction of additional wefts which are tightened around the latter. Vertical "posts" consisting of stem segments of roseau *(Gynerium saccharoides)* are woven into the four corners of the container's skin if a panier voyage is being made.

When the mam has been completely enveloped in its skin, the maho bonds are withdrawn, and the basket is ready to be bordé, i. e. given an edging. Two stem-segments of roseau and one of the unseparated lárumą are cut to the length of the basket mouth's circumference for this purpose. According to the size of the basket, the former vary from ½ to 1 cm, the latter from ¼ to ½ cm in breadth. The projecting warp ends of mam and skin alike (they are sometimes, but rarely today, tucked in upon themselves after the manner described by Roth), together with any projecting leaf, are now "shaved" (with a sharp knife or razor blade) even and parallel around the circumference of the mouth. Then the roseau edgings are applied, one around the outside of the skin, the other inside the mam, with the lárumą segment bridging the two in guise of a lid. This edging is now sewn together and onto the basket by a series of reef-knots which pass around its three components and through the border of skin and mam (Figure 2). The thread used for this purpose is made from the leaf-fiber of la pite (a wild pineapple), not spun on the leg into twine, as for fishing-line, but passed under the big toe and twisted in single ply. Moreover, this thread is blackened

before use with an unidentified resin (found on the windward beaches during the first three months of the year) called manni, which strengthens and preserves it from decay.

The lárumą skins are woven and built up on the same general principles as their mams, except that the reddish brown strands of the former are varied by others of white (obtained by scraping before use) or black (see above), which

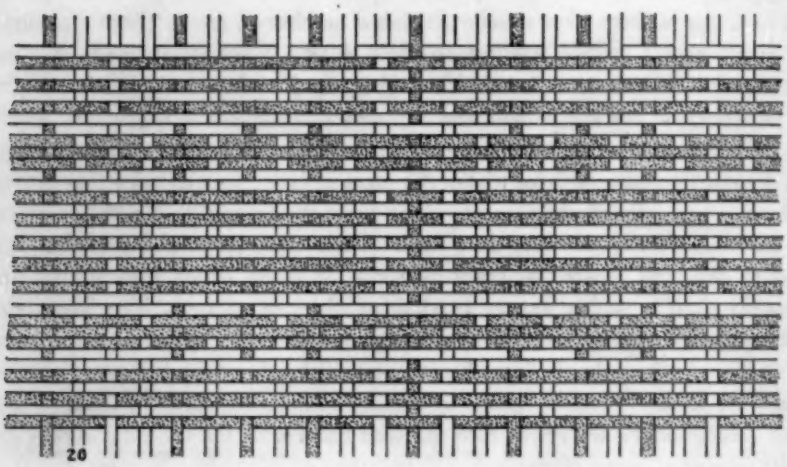

FIG. 3. Checker design (called bariolé) in wicker pattern basketry.

are so arranged as to form a design. This does not necessarily cover the whole basket, but is limited more often to two or more bands running across the top and bottom and around the sides of the basket. Such design vary somewhat with the basket-maker's fancy, but there appears to be at least a basis of tradition behind them. One of the more orthodox, in which the wefts go alternatively over and under each warp element in such a way that the black wefts pass over most of the white warps and under the black, is shown in Figures 3 and 4. The former represents the more usual, rather widely spaced arrangement, while the latter illustrates how the same design shows up in fine work. Its formula is (w equals white; b equals black); warps: 3w, 1b, 1w, 1b, 1w, 1b, 2w, 1b, 2w, 1b, 1w, 1b, 1w, 1b (repeat, and end off with 3w); wefts: 2w, 3b, 2w, 1b, 1w, 1b, 1w, 1b, 1w, 1b, 1w, 1b (repeat). This design is known as bariolé "variagated"; and the white warp which divides it symetrically (twentieth from the right) as the portugais, "Portuguese" (?). Recently, yellow and violet stained la pite fiber thread (see

above) has been woven in this design into belts 4 cm wide, with the portugais running right down the middle, but this may be a new application of an old pattern.

While Roth's "hour-glass pattern" technique is quite unknown to Dominica Carib of today, at least a twill weave not unlike that described and illustrated by him for Guiana in section 432 of the *Additional Studies* is employed here by a very few Carib in decorative baskets otherwise similar to those whose manu-

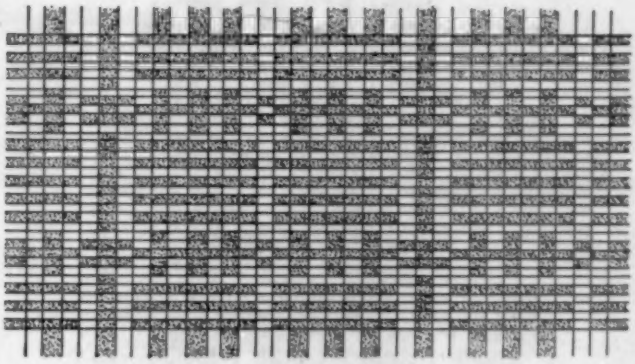

FIG. 4. Checker design in fine work.

facture has just been described. But whereas the twill of Roth's specimen is of the one-under-and-over-three type usual in Guiana basketry, all those I have seen in Dominica are based on the one-under-and-over-two pattern commonly employed here in making fans and hebišet (cassava-sifters). Moreover, both mams and skins of the Dominica specimens are twilled (although the former are in plain herringbone), whereas in Guiana, according to Roth, the mams are usually in wicker weft. In such baskets, warp and weft are indistinguishable except in being usually of different colors (see Figure 5). If the warp is taken to be white and the weft black, then successive wefts starting at the same warp pass as follows (brackets indicate introductory point of weft and are not to be repeated); u equals under, o equals over: A-ul, o2, u2, o2, (repeat); B-(u2), o2, u2, o3, u2, o2, u3 (repeat); C- o1, u2, o2, u2 (repeat); D-(o2), u2, o2, u3, o2, u2, o3 (repeat). The next four wefts repeat this arrangement (ABCD), then follow two sets of four wefts each in the order ADCB. The entire formula may thus be represented by ABCD, ABCD, ADCB, where A, B, C, and D follow the picks indicated above.

Whether by design or, as I incline to believe, because the requisite number of warps strands had been miscalculated, the above pattern is changed on the short sides of one basket in my possession, the weft strands on reaching the corners passing: A-u1, o2, u2, o2, u3, o2, u2, o2 (repeat); B-(u2), o2, u2, o2, u1, o2, u2, o2, u3 (repeat); C-o1, u2, o2, u2, o3, u2, o2, u2 (repeat); D-(o2), u2,

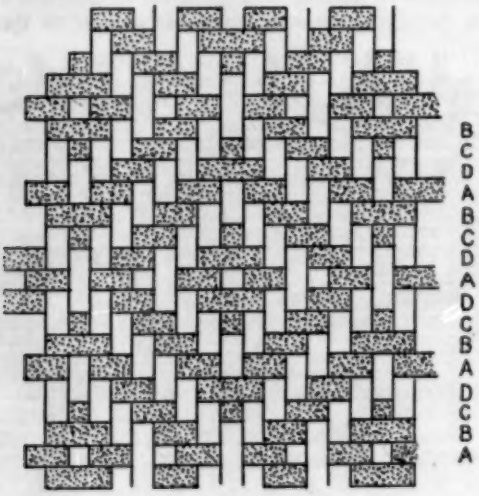

FIG. 5. Design of the Dominican mam.

o2, u2, o1, u2, o2, u2, o3 (repeat). This pattern repeats after only 14 (instead of the former's 16) strands have been passed in the order: ABCD, ABCD, ADCB, AB.

White strands for decorative baskets may be obtained, as has been mentioned already, by scraping off the reddish brown surface of sun-dried lárumą skins. Although less resistant, the peeled, bleached, and sun-dried midribs of the roseau leaf and the dried split leaf-stems of the cachibou are sometimes preferred for this purpose, since they are of a purer white and more brilliant than the former.

The fans referred to in an earlier paper,[2] and now made, not by the Carib, but by the members of a colored community living on the fringe of the rain forest near the center of the island, are of especial interest because their shape and method of construction are intermediate between those of the Arawak and Carib types described by Roth for Guiana, and such as might well have evolved

2 See Taylor, *The Caribs of Dominica*, p. 131.

in the islands where these two cultures intermingled. This little community practices no other form of basketry; and it seems probable that the making of these fans was first introduced by some Carib who married and settled among them.

Except for a band consisting of two black and two violet (or otherwise colored) strands running diagonally from lower right through the center to the top left-hand corner of the fan, only white lárumą (or roseau) strands are employed. They are woven in a one-under-and-two-over pattern of herring-bone twill forming concentric squares.

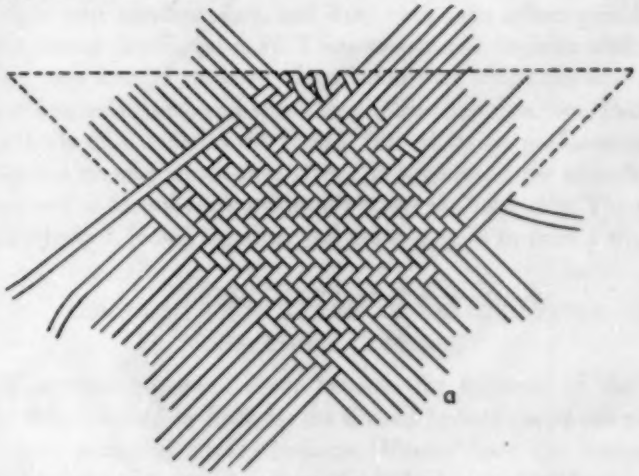

FIG. 6. Start of fan made in colored community in Dominica.

A start is made by weaving together in this manner two sets of from 18 to 24 strands each. These should be adjusted so that their butt ends all project on the lower sides of the diamond so formed, and are about double the length of the head ends projecting from the upper sides of this foundation, *a* (see Figure 6).

Next, starting at the figure's apex and working outwards, each set of upper projecting strands is bent—one set inward and down, the other outward and down—and woven back into itself so as to build up two wings, *b*, shown in Figure 7. The last strand on either side *(s)* is left unbent until completion of the fan, when it is tightened, doubled back on itself, and cut short. The original diamond has now become an inverted triangle whose base will form the upper edge and whose apex will be the center point of the finished fan.

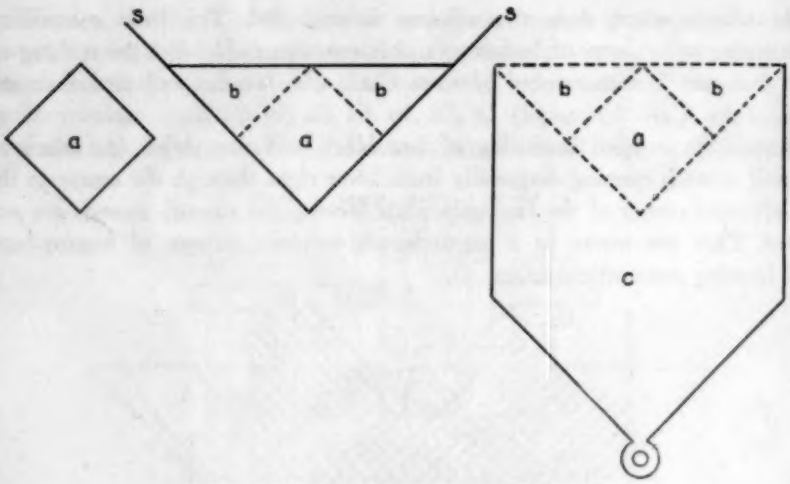

Fig. 7. Lay-out of the sections of the fan.

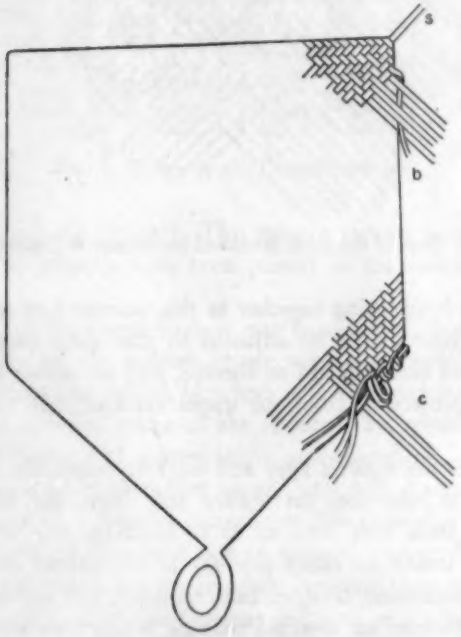

Fig. 8. Edging of the fan.

Starting again with that which is uppermost, or last bent, each strand is now rebent inward and downward, and woven back into the fan along a course parallel to and on the same path as that which it followed in the original diamond. This process, which produces an edging at right angles to that just completed, as well as filling in the body of the fan, is continued on either side until the desired length is obtained (see Figure 8, *b*).

When this stage is reached, a last strand is bent over but not interwoven with the others. Over and round this underlying strand as foundation, the next two strands taken together and superimposed, are wrapped, brought up on the top side of their own standing part, and bent under the others parallel with the foundation strand (see Figure 8, *c*). These two strands, together with the foundation strand, now form a composite foundation over which the next two strands are wrapped superimposed, and which they themselves then join. Each successive pair of strands thus encircles the bundle formed by its predecessors, and then itself joins the bundle, which thus comes to contain all the strands on its side of the fan, and to form an apex with those from the other side. The two bundles are finally trimmed, joined together, and overcast so as to form a ring.

COMPARATIVE NOTES ON THE BASKET TYPES
(By Harvey C. Moore)

The similarities suggested above between the basketry of the Dominican Carib and that described by Roth for the Guiana Indians causes one to conjecture on other areas possessing similar basketry. Wissler[3] long ago commented upon the similarities of design and materials of cane baskets in Louisiana and northern South America. Commenting upon baskets in some Pacific Islands that had similar designs, he warned about assuming diffusion from designs only. However, there was in addition to similarity of design the factor that cane splints were used for mats and baskets in the southeastern United States, the West Indies, and the basins of the Amazon and Orinoco.[4] Gower warns that since the technique involved in cane-splint basketry was rather simple, its presence need not mean diffusion from only one center of invention.[5] However, it was present in the Muskhogean area, among the Yuchi of Georgia and South Carolina, in Florida, among Taino and Island Carib of the West Indies, and in northeastern South America.[6]

3 Wissler, *The American Indian*, p. 78.
4 *Idem*, p. 51.
5 Gower, *Northern and Southern Affiliations*, p. 17.
6 *Idem*, p. 49.

Speck[7] states the uniformity of type, weave, and design of cane basketry in the southern and eastern United States point to its being a single art, with a center for North America in the lower Mississippi region. He goes on to mention possible Antillean or South American connections. A striking feature of similarity is the complex "double weave," although no waterproofing by the insertion of a leaf-layer such as *Ischnosiphon* has been reported for the Southeast.

That a cultural extension of cane basketry into southern Central America existed will be demonstrated later in this paper.

A brief exposition of specific points of similarity and dissimilarity between the Southeast, Antilles, and northeastern South America will now be given.

In the Southeast, the Yuchi[8] has two types of basketry, one like the Algonkian tribes and one using cane. The latter type was characteristic of the Southeast and Gulf area. The material was cane *(Arundinaria)*, nearly always twilled, and with bottom and sides possessing differing patterns.[9] Swanton[10] says that among the Chitimacha, on the Mississippi in Louisiana, the cane was split with the teeth and woven in two layers, forming a double basket—sometimes dyed black, yellow, or red. The Chitimacha[11] (at least in their basketry as revived in historic times) wove in two thicknesses with the glossy surface out and used the twilled pattern. All the baskets had a cover fitting closely over the lower part. Merwin was reminded by it of the material, weave, and uses of the basketry of the Guiana Indians.

The Hitchiti of the Lower Creeks split and stripped cane, soaked it in warm water before using, and dyed strips in advance.[12]

The Cherokee[13] of western North Carolina used the "double weave" of two splints of cane in a diagonal twill with the smooth outer surfaces exposed on the inside and outside of the basket. The Cherokee designs occurred among other tribes of the southern or Gulf area, but the designs of the latter had more elaboration.[14] Adair[15] mentions the Cherokee's dividing the swamp canes into long, thin, narrow splinters, dyed several colors. Among the types was a nest

7 Speck, *Decorative Art*, p. 65.
8 Speck, *Ethnology of the Yuchi*, p. 31.
9 *Idem*, p. 32.
10 Swanton, *Indian Tribes of Lower Mississippi*, p. 348.
11 Merwin, *Basketry of the Chitimacha*, p. 34.
12 Swanton, *Indians of Southeastern United States*, p. 605.
13 Speck, *Decorative Art*, p. 59.
14 *Idem*, p. 62.
15 Williams, *Adair's History*, p. 456.

of eight or ten baskets. Wissler[16] lists baskets of cane and splints as among the distinctive traits of the Southeast, with the double or nested basket and the basket meal sieve as special forms.

The Seminole of Florida, although not significant basket makers, used the swamp cane and the fan palmetto for making flat baskets and sieves.[17] The Pile Dwellers of the Florida Keys left remains of wattled cane matting and Cushing[18] deduces the people understood basketry making.

Hence it appears that cane was used in similar manner throughout the Southeast for baskets (and also for mats and cradles).[19] Almost everywhere the work was by women.[20]

Turning to South American basketry, we find that the Macusi[21] (Central Carib) used palm frond splints for baskets to store farina. These were lined with leaves, and covered with leaves and splints interlaced. The men made maranta plant splints (scraped and used naturally, bleached, or stained black) into shoulder or trinket baskets with telescoping lids. The Waiwai (Central Carib) made the best ones. The Wapisiana[22] (Central Arawak) used *iturite* palm leaves to line the bottom and sides of baskets holding farina and cotton. The men's shoulder, or trinket, box was the same shape as the slightly larger lid which slipped over it.[23] Scraped strips of maranta plant were bleached or stained black.

Modern Caingang[24] (non-Guarani of São Paulo, Paraná, Santa Catarina, and Rio Grande do Sul) make some twilled baskets, like those of the Guayaná, that are of thin strips of split bamboo and are made in two parts that telescope into each other.

Among the northwest Amazons were plaited cane *(Cecropia peltata)* baskets, sometimes with black cane interwoven into the white.[25] The Boro and most of the other tribes north and south used a cylindrical cassava squeezer with loops at each end. The strips, which look like cane but are apparently of a species of *Desmoncus,* were twilled. Most of the manufacture was by women.

16 Wissler, *The American Indian,* p. 238.
17 MacCauley, *Seminole Indians of Florida,* p. 517.
18 Cushing, *Exploration of Ancient Key Dwellers' Remains,* p. 63.
19 Swanton, *Aboriginal Culture of the Southeast,* p. 690.
20 *Idem,* p. 700.
21 Farabee, *The Central Caribs,* p. 23.
22 Farabee, *The Central Arawaks,* p. 23.
23 *Idem,* p. 24.
24 Métraux, *The Caingang,* p. 457.
25 Whiffen, *The North-West Amazons,* pp. 97-98.

Nordenskiöld[26] noted baskets of leaves of *Gynerium* among the Yamiaca, Tambopata-Guarayo (Chāma), Atsahuaca, Cavina, Chacobo, Yuracáre, Guarayú (Pauserna and Guarayo), Chimane, and probably among the Mojo. Theirs is the technique of the Piro (referred to later). Square baskets with overlapping lids are known among the Yuracáre, Chimane, Guarayú (Pauserna and Guarayo), Mojo, Chacobo, and Atsahuaca—all located in an area roughly between 60°-70° W longitude and 10°-20° S latitude.[27]

Baskets with overlapping lids showed a general scattering all over South America between the Equator and Curaçao, also between 12°S and about 23°S and 60°-70° W. Both Arawak and Carib of the Guiana Coast evidenced this type.[28] Quite possibly allied in form is basketry found in Peruvian graves.[29]

The Macheyenga[30] (Arawak who lived along the middle course of the Urubamba River in eastern Peru) made good telescope baskets of wild cane for storage of trinkets, clothing, etc., and the Piro[31] (Arawak to the east of the Macheyenga) made the small telescope basket, also common among the Campa, and used them similarly.

Among the tribes of eastern Bolivia and western Matto Grosso, the ancestors of the Mojo (Arawak), like the Guiana Indians, made round telescope baskets and also made flat, circular trays and carrying baskets with hexagonal weave (lattice type).[32]

With reference to extensions of basketry of this general type into Central America, Skinner[33] notes a specimen among the Bribri of Costa Rica of a basket of split palm leaves or of cane, in diagonal twill, and like some of the baskets of the Alibamu, Choctaw, and other Gulf Indians. These rare baskets were used for holding trinkets.

Among the Guiana Indians Im Thurn found many similarities to Antillean basketry. He states[34] that the men were basket makers and the material used for all fine work was the split stems of *Ischnosiphon*, called iturite, other species

26 Nordenskiöld, *Ethnography of South-America*, pp. 198-203.

27 *Idem*, p. 204.

28 Nordenskiöld, *Changes in the Material Culture*, pp. 172-174.

29 As an illustration, the Uhle collections from Chincha contain "rectangular twilled work baskets, with lid, used to hold spindles, yarn," etc., found in graves of three time periods: Late Chincha I, Late Chincha II, and Inca (and at the period of the Spanish conquest). See Kroeber and Strong, *The Uhle Collections from Chincha*, p. 31.

30 Farabee, *Indian Tribes of Eastern Peru*, p. 6.

31 *Idem*, p. 56.

32 Métraux, *Native Tribes*, p. 67.

33 Skinner, *Notes on the Bribri of Costa Rica*, p. 63.

34 Im Thurn, *Among the Indians of Guiana*, pp. 278-279.

of iturite being used for the rougher work. The Arawak, Ackawoi, and Warrau made square pegalls, with lid and baskets of the same shape and overlapping. (The nests of baskets were made as curiosities for Europeans.) Many true Caribs made pegalls of oblong shape. (The Indians of the savannah made round pocket-shaped baskets without lids which they covered with leaves when necessary.) Sometimes basket and lid were made double and leaves *(Ischnosiphon)* were inserted between the layers.

Most baskets were made in the same way and of iturite, split into strips, sometimes peeled, bleached, natural, or stained black.[35] The quakes were loosely woven and lined with iturite leaves. The sides were composed of intermixed leaves and farina or salt.[36] A covering of leaves was added after the basket was full.

The Nikari-karu, a hybrid group on the Brazilian-Guiana border, made their pegalls of the leaves of a palm *(Orbigiguia)*. This was rare in British Guiana, but the shape of the pegalls was square or oblong, like the pegalls of the Arawak.[37]

The basketry of the other islands of the Antilles offer similarities to that of Dominica. The aborigines of Porto Rico[38] used "plaiting" interwoven with leaves to become watertight. Fewkes noted that basketware made in the penitentiary at San Juan during the time of his observation resembled that of the Carib of St Vincent and Dominica. The hammock[39] of the prehistoric Porto Rican "closely resembled some of those still used by the tribes of the Orinoco and manufactured by Indians elsewhere in South and Central America."

Summary

Any conclusions on types of weaves and patterns of baskets must consider first the practical level of materials involved and mechanical limitations of the craft. Generalizations proceeding from any one factor, as type of material used or design, may lead to hasty and unwarranted conclusions. Basketry must be evaluated as a complex encompassing such things as material used, type of weave, ornamentation, quality of work, uses to which the baskets are put, sex dichotomy in basket making, and preparation of materials. When several of the elements of this complex are present, and the time periods permit, we can assume the similarities manifested in various geographically unconnected areas stem from diffusion and are not parrallel outgrowths from comparable mechanical conditions. The available information on the basketry-making areas included in

35 *Idem*, p. 281.
36 *Idem*, pp. 281-282.
37 *Idem*, p. 282.
38 Fewkes, *Aborigines of Porto Rico*, p. 212.
39 *Idem*, p. 34.

this discussion is often mainly that of a description of the baskets themselves. Too hasty an inference that similar design types are related should be avoided. However, the evidence herein assembled tends to support the view that the Antilles, northeastern South America, and southeastern United States form an area having pronounced similarities in basketry. In the Southeast the area extends from North Carolina to Florida (with probable extensions into the Keys) and west to Louisiana. Specific reference has been made to the Antillean islands of Dominica, Porto Rico, San Juan, and St Vincent. Known similarities in culture among other islands of the Antilles suggests a wider distribution there. In South America there are indications of discontinuous distribution extending far beyond the Guiana area. There are southwestward extensions at least to the Macheyenga (approximately 74°W and 12°S) and the Atsahuaca and Yamiaca (approximately 70°W and 15°S). There is another extension at least to the Guarayú (approximately 64°W and 17°S). A northwestward extension goes as far as the Bribri of Costa Rica. Suggestive similarities are found among the modern Caingang (along the Atlantic coast between approximately 20°-33°S).

Bibliography

Cushing, Frank Hamilton *Exploration of Ancient Key Dwellers' Remains on the Gulf Coast of Florida* (Proceedings, American Philosophical Society, vol. 35, 1896).

Farabee, William Curtis *The Central Arawaks* (University of Pennsylvania, University Museum, Anthropological Publications, vol. 9, 1918).

The Central Caribs (University of Pennsylvania, University Museum, Anthropological Publications, vol. 10, 1924).

Indian Tribes of Eastern Peru (Papers, Peabody Museum of American Archaeology and Ethnology, Harvard University, vol. 10, 1922).

Fewkes, J. W. *The Aborigines of Porto Rico and Neighboring Islands* (25th Annual Report, Bureau of American Ethnology, 1903-1904, pp. 3-220, 1907).

Gower, Charlotte D. *The Northern and Southern Affiliations of Antillean Culture* (Memoirs, American Anthropological Association, no. 35, 1927).

Im Thurn, Everard F. *Among the Indians of Guiana* (London, 1883).

Kroeber, A. L., and William Duncan Strong *The Uhle Collections from Chincha* (University of California Publications in American Archaeology and Ethnology, vol. 21, pp. 1-54, 1924).

MacCauley, Clay *The Seminole Indians of Florida* (5th Annual Report, Bureau of American Ethnology, 1883-1884, pp. 469-531, 1887).

Merwin, B. W. *Basketry of the Chitimacha Indians* (University of Pennsylvania, Museum Journal, vol. 10, nos. 1 and 2, 1919).

Métraux, Alfred *The Caingang* (Bulletin, Bureau of American Ethnology, no. 143, vol. 1, pp. 445-475, 1946).

The Native Tribes of Eastern Bolivia and Western Matto Grosso (Bulletin, Bureau of American Ethnology, no. 134, 1942).

NORDENSKIOLD, ERLAND *The Changes in the Material Culture of Two Indian Tribes under the Influence of New Surroundings* (Comparative Ethnographical Studies, no. 2, Göteborg, 1920).

The Ethnography of South-America Seen from Mojos in Bolivia (Comparative Ethnographical Studies, no. 3, Göteborg, 1924).

ROTH, WALTER E. *Additional Studies of the Arts, Crafts, and Customs of the Guiana Indians* (Bulletin, Bureau of American Ethnology, no. 91, 1929).

An Introductory Study of the Arts, Crafts, and Customs of the Guiana Indians (38th Annual Report, Bureau of American Ethnology, 1916-1917, pp. 25-745, 1924).

SKINNER, ALANSON *Notes on the Bribri of Costa Rica* (Indian Notes and Monographs, vol. 6, no. 3, New York, 1920).

SPECK, FRANK G. *Decorative Art and Basketry of the Cherokee* (Bulletin, Public Museum of the City of Milwaukee, vol. 2, no. 2, pp. 53-86, 1920).

Ethnology of the Yuchi Indians (University of Pennsylvania, University Museum, Anthropological Publications, vol. 1, no. 1, 1909).

SWANTON, JOHN R. *Aboriginal Culture of the Southeast* (42nd Annual Report, Bureau of American Ethnology, pp. 673-726, 1928).

Indian Tribes of the Lower Mississippi Valley and Adjacent Coast of the Gulf of Mexico (Bulletin, Bureau of American Ethnology, no. 43, 1911).

The Indians of the Southeastern United States (Bulletin, Bureau of American Ethnology, no. 137, 1946).

TAYLOR, DOUGLAS *The Caribs of Dominica* (Bulletin, Bureau of American Ethnology, no. 119, pp. 109-159, 1938).

WHIFFEN, THOMAS *The North-West Amazons* (London, 1915).

WILLIAMS, SAMUEL COLE (ed.) *Adair's History of the American Indians* (Johnson City, Tennessee, 1930).

WISSLER, CLARK *The American Indian* (2nd ed., Oxford, 1931).

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